1859 PUBLISHED WEEKLY 1919

CHEMICAL LIBRARY
GENERAL LIBRARY
JUL 1 41919

AMERICAN GAS ENGINEERING JOURNAL

FORMERLY

AMERICAN GAS LIGHT JOURNAL

VOL. CXI., No. 2
WHOLE No. 3201

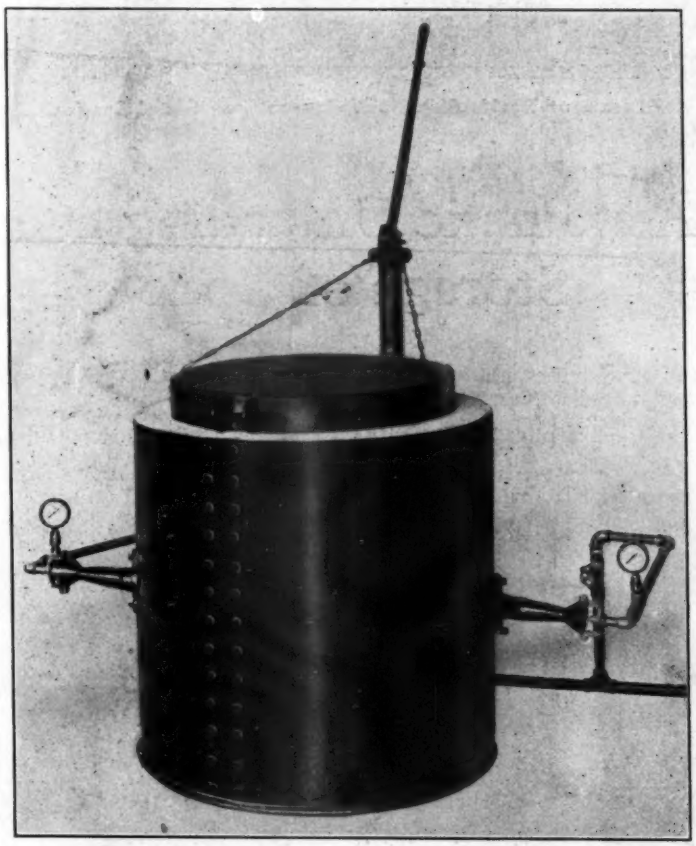
NEW YORK, SATURDAY, JULY 12, 1919

Subscription $3 per year
$4 Canada $5 Foreign

NEEDHAM HIGH PRESSURE GAS FURNACES

HEAT APPLICATIONS WITH MECHANICAL PRECISION

We announce to the Gas Industry in general that we are now manufacturing HIGH PRESSURE Gas Furnaces and Appliances for Industrial Purposes



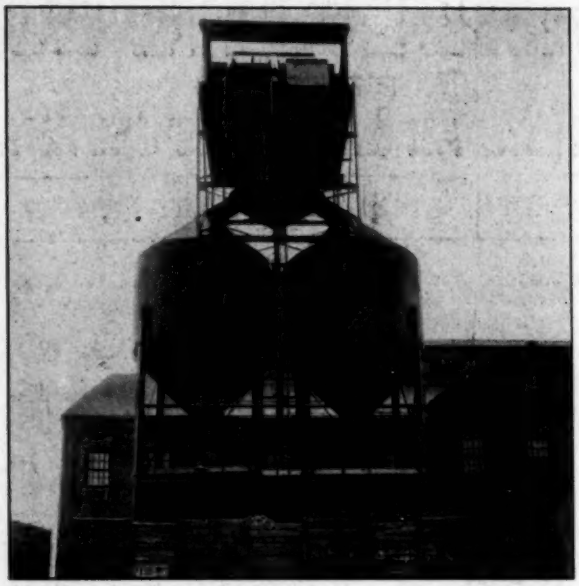
HIGH PRESSURE GAS BRASS MELTING FURNACE

These furnaces can be operated wherever high pressure gas is used or any system or method using compressor or blower apparatus.

We solicit your inquiries for new furnaces, and the conversion of air blast furnaces to high pressure.

The Needham Gas Appliance Co., Inc., 150 Lafayette St., N. Y.

INDEX TO CONTENTS, PAGE 31 ADVERTISERS' INDEX, PAGE 20



Beaumont Double Skip Hoist; Boston Consolidated Gas Co.

Automatic Unloading and Storage of Coke

The illustration shows how a coke car, or a number of cars can be unloaded and the coke stored with no labor but to shift the cars.

Two balanced skip buckets are used; one goes up as the other goes down.

The entire operation is automatic, each bucket fills, hoists, dumps and returns as long as material is supplied.

Would you like us to figure on a similar proposition for your plant?

Our catalog No. 34 may help you to decide. Where shall we send it?

R. H. BEAUMONT CO.

364 Arch St., Philadelphia, Pa.

New York Cleveland Boston Chicago

Canada—The Canadian-Fairbanks-Morse Co.—Montreal

AMERICAN GAS ENGINEERING JOURNAL. July 12, 1919. Vol. CXI, No. 2. Published Weekly by American Gas Light Journal, Inc., New York, N. Y. Subscription Price $3 per Year; $4 Canada; $5 Foreign.
Entered as second-class matter January 9, 1917, at the post-office at New York, N. Y., under the Act of March 3, 1879.

American
Gas Engineering Journal

FORMERLY THE AMERICAN GAS LIGHT JOURNAL

Vol. CXI, No. 2 NEW YORK, JULY 12, 1919 Whole No. 3201

Gas, Although Manufactured as an Industrial Product, Is, Economically, Nevertheless a Basic Industrial Material

Like Coal, Oil and Cotton It Is Consumed for the Purpose of Creating New Industrial Values —The Rules Governing Its Consumption and Distribution Therefore the Same as Those that Govern Consumption and Distribution of Any Other Raw Material

By L. W. ALWYN-SCHMIDT

The war has caused an enormous loss of men power in all countries of the world which in one or the other way will have to be replaced by machine power, either by making a better use of the existing machine equipment of the world or by adding new machines to those existing. Times like the present call for the inventive capabilities of the chemists and engineers. They are also particularly suitable for expanding the influence of whole industrial branches. For the gas industry has come the great chance to consider its position as a unit of the economic life of the nation, to organize its forces and to see whether it cannot enter new fields of usefulness.

To be able to do this the gas industry will have to make an intimate survey of its present day position. It will have to know which of the great markets it has lost during the last thirty years and which might have been retained by ordinary foresight and enterprise. It will finally have to learn of new opportunities for service.

In a recent article the author has considered the effects of this new economic development on the by-product industry. The present article may deal with the principal product, coal gas itself.

Gas, although manufactured as an industrial product, is economically, nevertheless, a basic industrial material. Like coal, oil, cotton and many other similar commodities it is consumed for the purpose of creating new industrial values. The rules governing the consumption and distribution of gas, therefore, are the same which govern consumption and distribution of any other raw material. There is, however, one principal difference. While coal, cotton, copper and other similar commodities can be shipped over any desired distance, if necessary to the other side of the globe, gas is limited in its distribution to a narrow zone. The gas works has to seek its customers in the immediate neighborhood of the plant. This supply-district is the market for the gas industry and the manager of any plant is principally interested in developing his old field of distribution.

This limitation of the sales field of the gas works has had a very detrimental effect on the industry as a whole. It has tended to make the managers of the local gas works provincial. Compelled to deal daily with the problems of a small market they have forgotten to view their situation from a national or even world aspect.

The Need of the Company Opposed to the Natural Desire of the Consumer

Inside its small field the gas works supplies the commodity at a rate frequently fixed by a public service body. Its most direct interest lies in selling as much gas as possible to consumers, which, however, in turn have no interest at all in the consumption of gas but desire rather, to keep down their gas bill as much as possible.

Every raw material meets some competition. Cotton, wool and silk compete and soon paper fiber will enter into competition with the three. Oil has to meet the competition of coal, gas and electricity. Most of the industrial metals compete with each other. But neither of the industries producing them has taken the competition as a matter of fact but has made attempts to fight it off in one or the other way. This competition has taken in some instances the form of an increased sales activity, in others it appears more scientifically by increasing the demand for the commodity in finding new means for its consumption.

This latter means was selected by the oil industry.

The mineral oil industry has been a very liberal supporter of scientific research. Thanks to this research work new uses have been found for mineral oil which were not dreamed of a few years ago. To-day it is not any more the question, how to find a market for mineral oil but rather, how to find new commodities to take the place of those made from oil, so to preserve as long as possible the rapidly declining oil reserves of the world.

The gas industry should do as the oil industry has done. It should find uses for its product. Instead of relying on lighting, heating and other known industrial uses which are made of gas, it should show to the world new ways of employing gas for the benefit of all.

Instances of New Uses

There is no doubt that only a very imperfect use is made at the present time of the great industrial possibilities of gas. With the world crying out for new industrial methods the gas industry finds a field ready to accept any suggestions coming from its representatives. But whatever aid the gas engineers can give should be rendered as early as possible. The author has not in his mind the employment of such methods as the free supply of gas motors, kitchen stoves, or similar appliances, already well employed to the end of raising gas consumption all over the world, but rather the devising of means entirely new to our present industrial life which, in their application, require the use of gas.

Of such means the war has produced a few, of which the experiments made in Europe with gas motors for locomobile engines probably are the most outstanding. English motor bus companies have been able to run their street service by using coal gas as fuel instead of gasoline.

The experiments have not been all too successful, neither, however, have they been entirely conclusive. War times, although frequently very inducive to general inventive activity, are not likely to provide for the quiet and attention necessary to develop a new idea to the point of its highest accomplishment, and the fact that much has been left to be desired in the use of gas for automobile motors really proves only, that it is very well possible to employ coal gas for this purpose while the future development of the invention must be left to a more intimate study. It is in the interest of gas consumption that these studies be continued and the gas industry, therefore, should find the means enabling further experiments.

Taking into consideration the present price of gasoline and the enormous number of automobiles it is clear that the possibility of getting the automobile owners as customers for the gas works is well worth following up.

And what is the matter with replacing the central heating system of our apartment houses by an individual gas heating system, which allows each flat owner to heat his flat just as he likes it and not as the janitors think it should be? Nearly all apartment houses have gas installed in their kitchens, why should it not be carried, if necessary free of cost, by the gas companies, to the living rooms and gas ovens be installed? Rents could be cheaper in this case and each flat lessee could arrange his gas consumption for himself. The open fire place would come into use again and would add much to the cheerfulness of the American city home.

Gas is used in many industries to-day either for heating or other purposes. With a little study and care the existing uses could be improved upon and extended. The drying system used by printing offices, paper mills and similar establishments, for instance, leaves much to be desired. If the gas industry could suggest improvements which would make the employment of these machines less dangerous and more certain in result they would soon find that a new demand would arise, resulting in a considerable increase in the consumption of gas. Heat is required in many industrial processes and gas might supply that heat just as good as any other heating or steaming process. It is not easy to explain where the inventive mind might best be employed usefully. The reader may imagine how a system of textile treatment during which hot air is blown into a chamber containing the textile. Possibly the same result might be obtained if the textile would be treated by an even heat produced by a great number of small gas jets acting in the immediate neighborhod of the textile. Very often whole industrial processes may be changed just by such a small alteration in method which is very well feasible. What about the possibility of drying wet surfaces not by the influence of heat coming from below but rather by gas flames playing from above upon the surface, the gas being blown through its outlets by a system of high pressure?

Gas has been employed with great success in bakeries. Could the present system of heating gas ovens not be improved? Could it possibly be made subject to a very fine automatic control permitting less supervision?

Firing of Glass and Pottery Kilns

Very little again has been done by the gas engineers in developing gas firing for glass and pottery kilns. Nevertheless here is a very wide field for the gas industry especially just now, where interest in the development of new industries is very great.

What have our gas engineers done to improve the employment of gas smelters?

Or, to take a trade very far removed from the ordinary gas plant manager, the hairdressing trade.

In this trade a hairdryer is employed which is heated by gas.

During the last few years a great number of electric dryers have entered the market and practically nothing has been done by the gas engineers to improve the gas dryer and to make it more fit to hold the field. Now it has received a new lease of life by finding a new employment. Permanent hair waving has become a part of the services rendered by the ladies' hairdressers. This permanent waving may be done by an attachment to the gas hairdryer and a great deal of gas is used in the process. However, also here electricity is proving itself more active. For one permanent waving machine employing gas there are half a dozen different appliances using electricity.

The foregoing may have served sufficiently for illustrating the great possibilities awaiting the inventor in the field of gas application. But it will also have shown why it is so difficult for the gas industry to make use of all these opportunities. Even the largest gas plant has not the means of directing far-reaching researches in all the fields of industrial enterprise, were it even only to find out, where gas may be employed. Still larger means will be required to make the improvements required to bring to the gas industry that new field of consumption which it needs to secure its future prosperity.

Combined effort will be necessary for that purpose. In the Old World, where industrial co-operation between the different branches of the industry is more developed, several means have been employed to encourage industrial research. In England, for instance, industries have combined to create funds which were handed to universities for the purpose of starting research organizations.

It seems that such methods should be an inspiration to our own gas industry. A fund might be collected to endow national research in one or the other way. Like in other countries the beginning might be made with a public price contest for an essay on how to improve the industrial consumption of coal gas. This might be followed by a similar contest dealing with the question of gas appliances in industrial production. Finally, prizes might be given to successful inventors producing practicable gas consuming machines for employment in various industries. The result of such a campaign would soon show. Not only would there be produced a great deal of useful information on the subject, but the inventors would become interested in the subject, so would the consumers. The consumer knows in his heart that there is a good deal in gas and that it might be employed in many industrial processes, being cheaper than any other means of producing heat. Many factories are using gas to-day for one or the other purpose. If they see that the gas industry takes an interest in their enterprise, beside that of selling them the gas, they will come forward by themselves with useful suggestions.

But each individual manager can give an impetus to the movement in his own particular sales field by improving upon the activities of his own service department. How many managers have in their employ men really competent for doing that work?

The manager anxious to increase the sales of his enterprise only too often is inclined to give preference to a dashing salesman instead of a well-trained developer, who will make a study of the wants of the district and develop the market on a scientific and permanent basis.

To do this such a man must have more than an ordinary understanding of the problems of his customer. One may very well picture a representative of the gas plant entering a paper factory suggesting an improvement of the drying apparatus, saving the mill a few thousand dollars yearly on accidents and other losses and adding at the same time a new consumer to the list of the gas plant. Let our gas salesmen be servicemen first and salesmen second, let them seek rather for new fields of consumption instead of trying to increase the sales in directions which can very well take care of themselves.

The writer knows very well that this is not easily done. It requires not only a change in method, but it requires, still more, a change in attitude.

There has never been a better chance for the gas industry than the present. The by-products plants are busy. The chemist inventing daily new processes entailing the use of the by-products of gas making and the industry of the country is keen for progressive methods. The industrial equipment of the Nation is changing and will become more effective from year to year. If the gas industry cannot make good under such conditions it cannot be blamed on the consumer, it is the gas industry that must remain responsible for its future fortunes in a world which will suffer only the fit.

Expresses Belief that Gas Companies Will Eventually Confine Their Merchandising to Gas Itself

Thomas Crawford Discusses Collections and Outlines Experiences at Clinton, Iowa

The gas company is the greatest credit organization in any community, declared Thomas Crawford, general manager of the Clinton Gas & Electric Company of Clinton, Iowa, in a paper before the recent convention of the Iowa District Gas Association. To install a meter on a consumers' service and tell him to go to it and help himself. What other business is conducted on such broad and progressive lines for a customer?

Method Followed at Clinton

Our method of handling collections is as follows: The consumer is requested to sign an application for ordinary meters, which reads as follows: "I hereby make application for gas supply at No. ——— and agree to pay at your office all bills for gas consumed upon the premises according to the meter registration until I give you written notice to discontinue the supply. You shall have access to your meter anl pipes at all times as provided by law. In case of a leak or smell of gas on the premises I agree to notify you at your office immediately. I also agree to consume a minimum of 25 cents' worth of gas each month and commence to use gas within forty days from date connection is made."

We look the applicant up in our credit book and if he has a good rating we set him an ordinary meter. If he has not, we require him to pay a $5.00 meter deposit or any amount computed on account of gas we estimate he will consume in four weeks. Our discount period is the 15th of the month following, and he really has six weeks credit but we give him the benefit of the doubt for two weeks. If the applicant will not or cannot put up a deposit, we have him sign an application for a prepayment meter, which reads as follows: "I hereby make application for gas supply at No. ——— Street, and agree to pay cash in a prepayment meter for gas consumed upon the premises according to the meter registration until I give you written notice to discontinue the supply. You shall have access to your meter and pipes at all times as provided by law. In case of leak or smell of gas on the premises I agree to notify you at your office immediately. I agree also to consume a minimum of 50 cents' worth of gas each month and commence to use gas from the time connection is made. In case my meter is tampered with by any one not an employee of the gas company, I agree to reimburse company in full without question for all gas consumed."

Partial to Prepayment Type of Meter

We have the same rate on the prepayment meter as we have on the ordinary, and while we realize at this time we are in the minority on the prepayment meter question, we still try our best to get the applicant to allow us to install a prepayment meter.

We have about 5,500 gas meters set, 3,700 of which are prepayment meters. The prepayment meters are read from the 10th to the 15th of the month and the ordinary meters are read the last eight days of the month, and the bills are then made out. On the first of the following month collectors take out and deliver the bills,

collect what they can and nothing further is done with the collections until after the 15th of the month, when a delinquent list is made up and collectors go out after delinquents. The two months' delinquent consumers are called on first, as well as the larger bills, and the usual follow-ups by personal calls is followed. If the bill cannot be collected shut-off notices are sent out, and in 98 per cent of the cases the money is sent in, and in 2 per cent possibly, shut-off is actually made.

We often set a prepayment meter on a delinquent and allow him to pay as he uses the gas by setting up the rate on the meter, generally with his knowledge. In making prepayment meter collections the collections are made in envelopes, each consumer having a separate envelope. The money, reading, etc., is put into and on an envelope, placed in a satchel and brought to the office where the money is counted on a 25 cent counting machine, after which the envelope records are entered in a prepayment meter ledger, checked for consumption and money. After this is done any meters not checking up correctly are changed and the money collected from the consumer, or refunded, as the case may be.

Sees Gas Companies Confining Merchandising to Primary Product

A credit bureau in a community is the best asset it can have, as each subscriber to the credit bureau reports each week and the average citizen usually tries to stand well with the credit bureau. We contribute to the credit bureau liberally, and co-operate with it. In fact, the list of names for this bureau is usually made up in our office on our addressograph, because we have the most up-to-date list of consumers or citizens in the city on our list.

We have never sued for a gas bill and nearly always make collections. Collections for gas are much more easily made to-day than formerly, as gas is a household necessity and people will pay willingly for it. We conduct our merchandise department very much on a cash basis, never giving credit longer than 30 days. We have always been the pioneers in introducing gas consuming devices, and will continue to do so, but we are encouraging merchants, plumbers and others to sell good gas appliances and we protect them on profits. It is my firm belief that gas and electric companies will eventually sell only their product and do very little merchandising. I have tried this theory out and thoroughly believe in it.

26,000 Cu. Ft. Per Meter Per Year

We have now better than one meter for every five citizens and are sending out around 26,000 cu. ft. per meter per year. We never misrepresent any appliance to the consumer to help its sale, always telling the prospective consumer the maximum gas consumption for one in his circumstances, rather than the minimum average consumption.

We charge for service from the curb in and make a profitable charge for everything that we feel is not unreasonable. People are getting over the idea of getting something for nothing from public service corporations, and I believe we will have our business stabilized and operated, eventually, the same as in large manufacturing concerns.

The way of the gas man the last few years has been very strenuous, and from this time on there is no question that policy, rates, service, etc., will go through a reconstruction period. If you give service and quality, in the end there will be no trouble in being reimbursed for it.

The Use of Gas in Connection with the Manufacture of Pens

Process of Manufacture—The Evolution of the Steel Pens

By GILBERT C. SHADWELL

Gas is employed in the manufacture of pretty nearly every pen that is anyways generally used. Not only is gas used in making the common steel pens, however, but in connection with parts of the holders.

Appliances Almost All of Standard Manufacture

The gas appliances necessary are almost all of standard manufacture with industrial appliance makers and no gas man should therefore have any difficulty in securing the business or in installing the most desirable and efficient appliances.

The heating machines, the tank furnaces, and the ovens, etc., are appliances familiar to most gas men and hardly need description.

Metallic pens were little used until the nineteenth century although not unknown in classical times. Nevertheless they did not become common until some seventy years ago.

It is recorded that a manufacturer of split-rings in Birmingham, England—Samuel Harrison—made a steel pen for Dr. Joseph Priestly in 1780 and steel pens were made and sold in London in 1803.

They were in the form of a sort of tube the edges met to form the slit while the sides were cut away as in the case of a quill pen.

As they cost about a dollar and a quarter each and were unduly hard they were not in great demand.

Various patents were granted following the period in which the gas fraternity would hardly be interested. It seems, however, that the credit for introducing machine-made pens belong to John Mitchell about the year 1822, and James Perry is believed to have been the first maker of steel slip pens. In 1828 Josiah Mason, who had been associated with Samuel Harrison in the manufacture of split-rings saw Perry's pens for sale in Birmingham and after examining them saw his way both to improve and to cheapen the process of making them. He therefore got into touch with Perry with the result that he made tube or "barrel" pens for him in 1820 and slip pens in 1829. It was Perry who did much to popularize the steel pen and bring it into general use. In his patent of 1830 he sought to obtain greater flexibility by forming a central hole between the points and the shoulders and by cutting one or more lateral slits in each side of the central slit. A further improvement consisted in forming elongated points in place of the shorter style previously employed.

Rolled Sheets of Cast Steel the Material Used

The metal used consists of rolled sheets of cast steel of the finest quality made from charcoal iron. These sheets after being cut into strips of suitable width, annealed in a muffle furnace and pickled in a bath of dilute sulphuric acid to free the surface from oxidized scale are rolled between steel rollers until they are reduced

to an even thickness of about 0.01 of an inch. From these strips or ribbons the pen blanks are next punched out and then after being embossed with the trade name, number and other marks are pierced with the central perforation and the side or shoulder slits by means of which the flexibility already referred to is obtained. After another annealing the blanks, which up to this point are flat, are "raised" or rounded between dies into the semi-cylindrical shape with which readers are—already familiar.

The next process is to harden and temper them by means of heating them in iron boxes in a muffle furnace, plunging them in oil and then heating them in a rotating cylindrical machine heated by a burner which gives the usual blue color. After this they are scoured in a bath of dilute acid and polished in a revolving cylinder. The grinding of points with emery follows, and then the central slit is cut by the aid of two very fine edged cutters. Finally the pens are again polished. They are then colored by being heated in a revolving cylinder and in some cases are coated with a varnish of shellac dissolved in alcohol. This is, roughly speaking, the process involved, more complete details of which will be given later in this article.

Other Metals Available

Metals other than steel have frequently been suggested and in fact are used to quite an extent, especially those of gold as used in fountain pens. Among the commoner metals also and used and tried, are silver, zinc, German silver, aluminum and aluminum bronze. It is recorded that a gold pen composed of two thin strips of gold tipped with a metal called rhodium was used over 100 years ago.

Gold being extremely resistant to corrosion, pens made of it are exceedingly durable, although that metal is too soft for the points which wear quickly unless protected by some harder material. For this purpose the metal iridium is widely employed by fusing the gold round it by means of a blow-torch.

Raw Material

The sheet steel is cut into strips of a convenient length and width and then rolled cold to the exact gauge necessary, according to the pen to be manufactured.

Cutting the blank is a mechanical operation and is effected with the aid of a screw press, in which a pair of tools corresponding with the shape of the pen has been fixed. On pulling a lever the screw descends driving the punch into the bed which cuts a blank with a scissors-like action from the strip of steel.

Marking the name is done by means of a punch fixed in the hammer of a "stamp" (or stamping die) worked by the foot or by power. The blanks are rapidly introduced between the guides fixed on the bed of the stamping die and as soon as the hammer has fallen the blank is thrown out and a new one introduced.

Piercing

The tools for this operation are of a delicate character. The blanks are fed by hand as above explained and the hole punched by a screw-press. This is a most important process as the pierce-hole and side slits determine the elasticity and regulate the flow of ink of the pen.

Annealing or Softening

The blanks are still moderately hard at this time and before "raising" it is necessary to soften them by heating to a dull red and allowing them gradually to cool.

Raising

The operator places one of the soft blanks on a die to which guides are affixed to keep it in position; then by moving the handle of the press, the screw descends, forcing a die which rounds the blank into the form of a pen.

Hardening

The pen is now too soft and is hardened by heating and then immersed in oil while hot, after which it is thoroughly cleansed from all grease. For this purpose two gas-fired tank furnaces are used. In one is placed the oil and in the other the liquid cleaning material such as lye solution salsoda and water or Oakite and water. Sometimes a third furnace is added containing plain water for rinsing purposes. The pens are generally placed in baskets which in turn are immersed in the tanks of heated liquids in turn.

Tempering

The pens are now hard but very brittle and in order to correct this defect, they are placed in an iron cylinder and kept revolving over a gas burner until they acquire a proper temper.

Scouring

After soaking in dilute sulphuric acid the pens are placed in iron cylinders containing fine stone and water or fine sand and revolved for several hours. This process is usually known as "tumbling." When taken from the cylinders or "tumbling barrels" they are bright and smooth.

Grinding

This is a process performed by hand on a "bob" or wooden wheel. The process is similar to "buffing." The wheel is covered with leather which is dressed with emery and revolves at high speed. A light touch on the emery wheel grinds off the surface between the pierce hole and the point to obtain proper action and to assist the flow of ink.

Slitting

This is a hand process performed with a press, the cutters being as sharp as razors. The pen is placed in position by means of guides and must be cut with utmost precision from the pierce-hole to the point. The point must be divided exactly in the middle, the least variation making the pen defective.

Coloring and Varnishing

The pens having been polished to a bright silvery color are placed in an iron cylinder and kept revolving over a gas burner until the tint required is produced. They are then immersed in a bath of shellac, varnish and

afterward placed in a gas heated lacquering oven, where they are dried .

Examination

The pens are now carefully examined after which they are boxed and packed for shipment.

The writer desires to express his sincere thanks to the Spencerian Pen Company of New York, N. Y., and Birmingham, England, for their courtesy in outlining much of the data given here which it is hoped will be of distinct value to the gas fraternity.

Believes Coke Is at a Low Price Level and Present Is Time to Buy

H. G. Stillson Outlines Factors Supporting His Contention—What to Buy

We cannot expect the price of coke to be reduced any further and it will remain but a short time upon its present level. This condition is brought about by coal production, freight rates and labor unrest, declared H. G. Stillson, manager of the Boone Gas Company, of Boone, Iowa, in a paper before the annual convention of the Iowa District Gas Association.

In fact I believe coke is at its low level and now is the time to contract.

Coal production is barely normal in either gas or fuel coal fields, for reasons that I cannot readily explain. This is largely due to unsettled labor conditions and excessive freight rates and probably we will have these conditions for some time to come.

Coal and gas plants operators have been hoping against all hope that the six-hour day and the five-day week will not prevail and that a return of railroads to private ownership will have a tendency to reduce first costs and freight tariffs, but vain hope, we probably have them here to stay.

For the period from January 1 to April 1 bituminous coal output is 35,000,000 tons short of the same period of last year, and about the same proportion holds for anthracite.

Stocks of bituminous coal declined 25 per cent in the same period, which amounts to 8,000,000 tons.

Thus I believe we should get our stock of coke in as soon as possible or we will again be holding a bottomless sack and with no idea of what we will pay. And if we do not, we cannot this time lay it up against the producers for I do not believe they are wholly to blame although they, like the old Quaker, must make money honestly or otherwise.

What Shall We Buy

This is strictly governed by your equipment. Having a 6-ft. set or larger equipped with a down run, you will be able to use even the cheaper grades of 6 and 8 hour coke with fair results, for this means a short blast and good control, you will be able to blast about two minutes and run about four. A long uncontrolled blast simply means heat going rapidly through the machine and doing a minimum of good. The use and frequency of the down run to suit your own conditions of operating, should be about every 5 or 6 runs.

Having a small set with no down run I would suggest the putting on a down blast anyway as it can be simply and easily done and will pay for itself in a very few months' operation.

Buy screened coke if possible, the breeze is only waste, and makes for clinker which simply makes trouble.

We will have to buy some breeze anyway as the coke produced like the butcher now has to "pass the buck" and the bones and breeze occupy the same relative position as far as we are concerned. This commodity will run from 10 to 25 per cent on you if you don't watch out and that is "too much" as the Chinamen say when they pay their gas bills.

We will acknowledge that two quality problems constantly confront the coke manufacturer, that of screening and quenching, but we must not allow too much of this trouble to be loaded into our coke cars. I have been "up against" this same proposition myself in a large coke plant, and I tell you that one has to be constantly on the job to prevent good river water being shipped out in place of coke, and many is the car that will get by you if you do not have reliable inspection of your help.

How Shall We Use It?

Blast short and often in retort 6 and 8 hour coke, keep deep fuel bed, and set free from clinker. If possible operate with pyrometer and steam meter and put in down blast on your small sets if you do not have it now. Change checker-brick in your carbureter at least twice to superheater once and now and then examine the top rows of brick in the carbureter to see that the brick do not get black or discolored clear through.

This brings up another long story which some one may wish to discuss in this connection, the matter of checker-brick and their position in the machines, as it certainly has to do with economy in the use of coke for heating. We have had the price more than tripled on us this year and have been tempted many times to buy brick from concerns who have their reputation before them and do not understand the making of proper firebrick for checkering or relining. The price of brick is falling slowly and may yet reach a level not as high as in the past year.

Fire clay falls in the same category and there seems to be as many grades as among barnyard fowls, with a price ranging from $2 to $15 per barrel.

Watch carefully your generator linings; every inch worn or burned away means more coke in capacity, thus more blue gas and your set will slowly become unbalanced and you will wonder why with the same conditions of operation your Btu. goes down and your coke goes up. The gas will not be properly fixed, as your superheater capacity is fixed quantity, constantly depreciating thus you will be making by spells lampblack and excessive tar while your men are groping for light on the peculiar action of the machines. We have found during the last year, however, that considerable of our trouble was from variation in the gravity of the oil as we have found that the gravity apparently changes from bad to worse for every foot in the storage tanks that the oil drops.

Sources of Supply

In central Iowa we obtain coke from Dubukue, Fort Dodge and Ottumwa in Iowa; Racine, Wisconsin; Peoria, Joliet and Chicago in Illinois, and some from Minneapolis, Minn.

Our experience has shown us that from over 18-24 hour coke we get the best results on a five and six foot machine, but even then there are exceptions. Could we get always good screened coke we would take this coke in preference to all others, but fine breeze from oven coke has the same objections as that from short hour coke.

Gentlemen are probably present from many of these places and I will not go into detail over our experiences with the many kinds which we have been using this last year, but I have often said to myself and help, "What sort of gas do you suppose so and so is selling their consumers?" I have found that the coke is a good sample of the efficiency of the operation of gas producing properties when you are considering the sulphur content that you get with the coke.

But you cannot be too critical of results gotten last year for I suppose plants even burned the refuse and old shoes from the stokers' locker rooms to keep the holders full, at least that is what we would be led to believe from the samples of coke that we got from them.

Sulphur this last year has been our bugbear, either from the coke or oil and we anticipated this by buying oxide by the car instead of the bag as formerly, and we have been certainly a busy clearing house in our town and we have struggled manfully with the proposition, as it "gets our goat" to have the consumers come to the window to pay the bill and mention a neighbor that washes, cooks and lights for a family of fourteen on 50 cents per month.

The Labor Situation

Seven years ago, I read a paper for you on "Small Plant Operation" and I mentioned the fact that we operate a mill in which we constantly feed two-legged material into the plant and take out mostly "chick feed," and the condition has not improved in those seven years since, and if anything it is worse. Now they have little concern save for the end of the perfect eight-hour day and when the ghost walks. They entertain the delegate who argues the six and seven hour day much better than they do us when we make our semi-daily visit. We continue to struggle with leaky steam valves, knocking engines and low water in the boiler and still we smile. The pay roll more than eats the profits and nobody save the Casualty Insurance Premium Adjuster seems to be interested.

Hydraulic Mains of Reinforced Concrete

Societe Technique du Gaz describes the successful result which followed the emergency measure of constructing ten hydraulic mains in reinforced concrete undertaken as the only possible course during the war in consequence of the high price of cast iron and the delay in getting such work completed. The metallic reinforcement consists of a network of ¼-in. round iron wire formed in squares 4 x 4 in. The concrete walls had a thickness of 2⅜ in. The walls of the main rest on I iron running the length of the retort bench. The valve of the tar outlet is let into the cement. A rebate along the upper part of the main receives the cover, formed of a slab of cement, into which are set the inspection and cleaning boxes. Before being taken into use all the interior surface of the main, as also the lower side of the cover, was given three coats of hot tar. This was done to close up the capillary passages in the cement and thus prevent any action of ammonia on the metallic part, the continuous flow of the tar during the working maintaining this protective coating. The main was brought into use without any mishap in the way of expansion or leakage. Test pieces of cement placed in it at the time of starting operations and six months afterward showed no signs of any action on the cement by the gas liquor. The ten mains were constructed in six weeks and the cost of each ($200) was much less than the quotation ($500) for the work in cast iron at the prices ruling.

Investment Condition Faced by Gas Industry in Connection with the Distribution System and Development of New Territory

W. J. Bertke Feels that Gas Companies Are Morally Bound to Make Extensions Even Though the Cost Be High

The question of extending the distribution system during 1918 was solved with comparative ease, explained W. J. Bertke, engineer, of the Sioux City (Iowa) Gas & Electric Company, in a paper presented at the recent annual convention of the Iowa District Gas Association. The demand for extensions was small, because few houses were being built. Labor was scarce, and what there was of it was demanded for essential industries. The men at the head of affairs at Washington were disposed to discourage improvements not essential to the prosecution of the war, and toward the end of the year improvements not absolutely necessary were prohibited from being made.

Conditions Still Somewhat Similar

Conditions at present, still somewhat similar to those existing in 1918, are, however, vastly different as far as they pertain to the gas industry. Since the signing of the armistice and consequent discharging of our soldier boys the labor situation is almost entirely reversed. While previous to Nov. 11, 1918, labor had to be employed in the essential industries, and was not available for the ordinary improvement work, it is now desirous and necessary to find employment for not only the returning soldiers but also for the thousands of men who were employed in purely "war work," which has ceased almost entirely at this time. New homes are rapidly being built, for it is understood that by means of this work thousands of men can be kept in employment.

It is now being urged by the Department of Labor that everything be done to promote the building of residences so that idle labor may be kept at a minimum. Many of these homes, being of modest cost, must necessarily find the correspondingly modestly priced lots, either in the suburbs or on the outskirts of the city. In this day and age even the modest class of houses demand gas service, for the luxury of yesterday is the necessity of to-day. Houses without gas service can neither be rented nor sold readily, or, if it be necessary to do so, it must be at a smaller figure than if the gas service is available. Therefore, there is a great demand for gas main extensions at the present time. We are experiencing an extraordi-

nary demand for extensions, and in this demand is also included the request to go to outlying districts, to do which would involve considerable expenditures of money.

Costs Not Lower

We have then confronting us the demand for extensions by reason of new homes being built, and we also have the necessary labor to lay the mains and services. Labor's wage has not been reduced up to this time, but also does not show much inclination to increase, so we therefore, so far as this matter is concerned, are in the same predicament experienced during the war period.

Prices of materials, particularly wrought and cast iron, increased during the war period to somewhat more than twice that of the pre-war period. Just recently prices of iron were adjusted downward about 10 per cent, but even with this reduction in effect the price of cast-iron pipe is fully twice that of the prices in normal times.

It is safe to assume, without creating argument, that all gas companies expect to earn a fair return on the investment incurred in making gas main extensions to obtain new business. Whether sufficient business must be obtained to pay a fair return the first year is a question that each company must decide for itself. It is, however, reasonable to expect that sufficient business be obtained within a few years to pay a fair return on the investment, or sound business judgment cannot be said to have been used in deciding to make the extension.

In making the decision, then, whether or not an extension is justified, the following must be considered. Many of the gas companies are in a condition where the revenues are barely sufficient to cover the total operating expenses and fixed charges. Some of the companies have been able to obtain increases in rates in order to meet the heavy increase in the cost of materials and labor, but it has not been possible to adjust rates to the extent necessary to place them in a normal financial or pre-war condition. But here it might be mentioned that from the patriotic point of view it was not expected that we place our entire war burden upon the gas consumers.

Difficulties in the Way

You will discover then that you will have to pay nearly twice the pre-war cost of installing the main extension and that your profits per thousand cubic feet of gas sold have dwindled to a low point, or may in some instances have disappeared altogether. The financial market is not enthusiastic to loan money to business which is in as precarious a condition as most gas companies are in, and for purposes where the improvement cost is about twice as high as normal, and with an unsatisfactory margin of profit in the business acquired.

The above in a general way describes the conditions prevailing at the present time, in so far as the problem of our distribution extensions is concerned. There is another side to it, and it should be carefully considered by all gas men.

The Obligation

While we all have not been fortunate to have our rates adjusted, many of us have. Rates in very few cases have been increased commensurate with the increased cost of doing business; nevertheless, none of us are so pessimistic as to deny that we have passed over the worst of it and that the pendulum of prices has begun to make the return swing. We cannot afford, however, to wait until prices are normal before we will begin to make extensions, for our product will be in demand, and we cannot deny to furnish this service at this time until conditions are more favorable. It is fortunate for us that our product is so desirable and so necessary to the people. In most of our cities there is but one gas company, and if we refuse to make the reasonable extension there is no one else to turn to for this product. It is deplorable that gas companies cannot in all cases obtain a reasonable rate so as to enable them to make extensions even under present unfavorable conditions, for it is ability to do things that counts, and not the wish that they could be.

Leaving the question of ability to make main extensions to be decided by each company's particular conditions, we will now look in a general way to the method to be adopted in making the decision whether or not a main extension is to be made.

It seems reasonable to assume that we will not base our returns on these new extensions entirely on our present rate of profits or lack of profits. If we cannot be optimistic enough to see normal or nearly pre-war conditions returning in the next few years, it would be better to lay aside the question of main extensions entirely until more satisfactory conditions are obtained. We are not in the gas business because we are philanthropists, but because we are genuine business men. We should not recommend that anyone, not even ourselves, spend money for a purpose on which no adequate return can ever be expected. If such is the case, exert your efforts to put your business in a wholesome condition, and do not consider extensions until you have done so.

Information that is Essential

In considering a main extension the following information must be ascertained in order to give the question full consideration:

First, we must have the estimate of the cost of the installation of the main, services, meter and meter connections, or such part of the foregoing which is not charged to the consumer. The estimate of the amount of business, or, in other words, the number of cubic feet, that can be sold per year to customers to be connected on the extension is next to be made. In calculating the profit you receive on each thousand cubic feet of gas sold you subtract the total operating costs, such as production, distribution, commercial, new business, general expenses and taxes from the average net rate received per thousand cubic feet of gas sold. The item of depreciation should also not be forgotten, and should not only include the depreciation on the main, services, meters, etc., alone, but also on its proportion of the plant investment. For convenience this can be arrived at by charging so many cents per thousand feet of gas sold to cover depreciation, but it must not be forgotten that this might not always be a just and proper charge in unusual cases but is satisfactory in most cases. After subtracting the depreciation charge from the difference between revenue and total operating costs, the net profit is shown. This net profit should show at

least as high a percentage on the total investment as it costs to borrow the money. Even then no allowances are made for its proportionate plant investment, nor can it be said that under the above conditions that there is any profit in the extension for carrying the responsibility of serving these additional customers, for you have only provided for the actual expense of obtaining the money for the investment and for the operating costs and depreciation. You are justified in making the extension on this basis, however, for once the gas main has been installed more people will be attracted along the line of the extension, and therefore the rate of return will increase as the number of customers on the extension increases.

Unless the district or the street in which you are contemplating installing gas mains promises future growth, the above return is not sufficient to justify the expenditure.

The above is only a general discussion regarding the conditions which should influence the decision regarding the making of the extension, it being taken for granted that there may be local reasons or conditions which must be carefully weighed in seeking the answer.

The question of laying mains ahead of paving is one of these, but it is our opinion that this is entirely aside from the subject and must be answered in each individual case.

Cost of Main Bulk of Necessary Expenditures

It being apparent that the bulk of the expenditures necessary in extending gas service is for the cost of the gas main, and that the larger the main the greater the cost, it may therefore be practical and good economy to go to higher gas pressures. While no hard-and-fast rule can be laid down specifying what the pressures should be, based on length of main and amount of gas to be delivered, it does appear that in many cases laying smaller sized mains and installing gas booster pump and individual house governors is more economical, from a combined investment and operating standpoint, than installing large gas mains and using low pressures. It is admitted, however, that where a low-pressure system is in use, changing to higher pressures is out of the question when making small extensions to the existing layout. When it is necessary to pipe for an addition of some size, or to a suburb, it might be well to weigh both the high and low pressure systems carefully before deciding which to use, for in general it may be assumed that it is cheaper to increase pressures rather than increase the size of mains in order to deliver the gas at satisfactory pressures.

In the smaller works where a pressure storage tank is used in place of the ordinary gas storage holder, an advantage exists to-day when extensions to the main system are being considered. Having already gone to the expense of installing the equipment to deliver the gas under pressure in small mains, it does not have to face the problem of equipping for higher pressures in order to eliminate the high investment cost of large mains. While leakage troubles increase with higher pressures, they do not do so in direct proportion. Leakage varies directly as the square root of the pressures, and while higher pressures increase leakage this feature is not so important as to outweigh the advantages of higher pressures in sending gas long distances.

Boosting the Gas

While the cost of boosting the gas pressure is fairly moderate, it is usually not practical to change existing low-pressure systems to a high-pressure system, except in modified form. Where new districts are to be furnished gas service it is more simple. High pressure has one very desirable aspect, because as the district grows the increased demand for gas can be easily taken care of by increasing the pressure rather than enlarging the supply mains.

The foregoing remarks are all of a general nature, and apply to both the large and small companies represented in our association. In discussing a subject such as this it is impractical to work out specific cases, for what may be our condition to-day may not be the same in the future. We are now facing a difficult conditions when considering main extensions of any extent, but we must do the best we can and unless more favorable conditions arrive in the near future the larger sized extensions might better be postponed until such time arrives.

Statistics on the Use of Prepayment Meters in England

The following statistics are taken from the Gas World Directory. It is some years since similar figures were published showing the use of prepayment meters in Great Britain. This tabulation, therefore, bringing the figures up to 1919, is of great interest. Some of our gas engineers have been of the opinion, apparently, that the prepayment meter has run its course. England takes a different viewpoint, as the output of meters in Great Britain during the last two years has been from 85 to 90 per cent of the prepayment type.

SUMMARY OF ENGLAND, WALES, SCOTLAND AND IRELAND COMBINED

	No. of Gas. Cos.	Annual Make	No. of Consumers	No. of Prepay Meters	No. of Cookers
1902...	1,607	159,456,604,000	4,167,795	953,068	998,878
1904...	1,598	168,078,931,000	4,630,568	1,326,917	1,329,947
1905...	1,615	173,577,186,000	4,955,706	1,584,128	1,532,419
1918...	1,577	249,537,500,000	7,995,993	4,344,020	4,745,229
Regular meters gained in sixteen years.....					437,246
Prepay meters gained in sixteen years.....					3,390,952
Total meters gained in sixteen years.....					3,828,198

Ex-President Taft Says Municipal Ownership Will Not Relieve Utility Situation

Ex-President Taft has given a great deal of thought and study to the utility situation. Recently he has made the following statement in regard to municipal ownership:

"There are those who believe the situation can only be relieved by municipal ownership. This seems to many and myself to be a short-sighted conclusion. Such a change of ownership will not reduce the cost of operation.

"Instead, our experience is that it will greatly increase it if ownership is to include municipal operation. The intervention of politics always increases the cost of operation and leads to unwise business management.

(*Continued on page* 32.)

Welsbach Company Conducting Summer School for Salesmen

Gas Companies Invited to Take Advantage of the Service of These Men Next Fall

The Welsbach Company is doing something just now which should be of considerable interest to gas managers all over the United States, that is conducting a summer school for salesmen. The main object is to educate these men so that they will be useful to gas companies this fall

The war made necessary many changes in gas manufacture, this in turn, necessitated some changes in the equipment of domestic burners in use or about to be installed in order that gas lighting appliances could be satisfactorily used.

In addition to this gas companies throughout the country have had to get along with curtailed fitting and inexperienced maintenance departments.

Looking to the near future and anticipating a very busy lighting season in 1919-1920, the Welsbach Company considered it necessary to institute a summer school at the factory for the instruction of their representatives who came directly in contact with gas companies, so that these men may assist gas companies in instructing new and old employees in the proper method of changing over burners to work satisfactorily on the gas now used in the various cities.

Gas burners can be made to work to the consumer's entire satisfaction. The noisy, spluttering burner can be made to burn quietly, the carbonizing flame changed to a perfect bunsen, all by a few simple and inexpensive changes in the burners already installed.

The special course in the Welsbach Company school covers four weeks and is attended by over forty men from the various wholesale departments of the Welsbach Company, from Maine to California.

The subjects covered are more or less technical and under the direct supervision of F. G. Corbus, superintendent of retail departments. Among the subjects are: "General Trade Conditions," Sidney Mason, president; "Factory Practice and Future Developments," Townsend Stites, general manager; "Mantle Manufacturing," E. L. Knoedler, general superintendent; "Lamp Adjustments," J. R. Stetser and J. J. Bonner; "Research Laboratory and Its Influences," S. Gulbrandsen, chemist; "The Control Laboratory," W. R. Holland, chemist; "Mantle and Burner Tests," W. D. Antrim. The school hours are from 8.45 to 4 p. m.

The following "department letter," signed by Sidney Mason, president of the Welsbach Company, is being mailed to the various departments of the company all over the country:

"Dear Sir:—I was very much pleased with the attention and enthusiasm shown by the men who attended the salesmen's instruction class, and if those attending succeeding classes not only show the same interest and enthusiasm but also aptitude, I shall consider our undertaking has been well repaid.

"The studies, as you know, are directed solely to technical matters, believing that by reinforcing the salesmen with this fundamental knowledge they will be qualified to intelligently present our products to the trade.

"I was unable to give much of my time to the class, but took the opportunity to say a few words regarding the business situation and how I view its effect on our own business possibility.

"That you may have some idea of my views, I wish to here incorporate substantially what I said:

" 'I believe the doubt and uncertainty following the armistice is entirely cleared away, and that speaking generally, there is a very confident feeling that the present and future holds a very bright outlook for business prosperity.

" 'I believe that the business situation is basically sound; that fear has given way to reason in looking at the problems of readjustment and reconstruction.

" 'The government industrial, agricultural and financial reports are a very certain "reason" for the present growing confidence which is giving the business world a courage that I predict will blossom into boom times, deferring into the distant future the crisis that was feared following the armistice.

" 'To share my opinion, one must accept the justification for the present standard of wages and the economic advantages to be derived from a high as against a low standard of living.

" 'It follows as a matter of course that if labor is to receive a high wage, the products of labor must command a corresponding high price.

" 'Very definite signs exist that notwithstanding the halting in buying by merchants and manufacturers, there has been no corresponding halting in the buying of the public; in consequence, production in many lines is sold up over the year's end, and the manufacturer who is halting to-day on the theory that raw materials and labor will be lower in price, or the retail merchant who is

(*Continued on page 42.*)

American Gas Engineering Journal

SIXTY-FIRST YEAR

Published Weekly by AMERICAN GAS LIGHT JOURNAL, INC., 150 Nassau Street, New York, N. Y.

ELBERT P. CALLENDER, Pres. S. G. KRAKE, Vice-Pres. FREDERICK A. SOUTHWORTH, Sec'y-Treas.

EUGENE C. MILES, Editor

Subscription $3.00 per year, in cluding postage in the United States, Mexico, Cuba, Porto Rico, Hawaii or the Philippines; in Canada, $4.00; foreign, $500—Single Copies, 10 cents

Contents of This Issue

GAS, ALTHOUGH MANUFACTURED AS AN INDUSTRIAL PRODUCT, IS, ECONOMICALLY, NEVERTHELESS A BASIC INDUSTRIAL MATERIAL—BY L. W. ALWYN-SCHMIDT 21

EXPRESSES BELIEF THAT GAS COMPANIES WILL EVENTUALLY CONFINE THEIR MERCHANDISING TO GAS ITSELF—BY THOS. CRAWFORD.... 23

THE USE OF GAS IN CONNECTION WITH THE MANUFACTURE OF PENS—BY GILBERT C. SHADWELL 24

BELIEVES COKE IS AT A LOW PRICE LEVEL AND PRESENT IS TIME TO BUY—BY H. G. STILLSON 26

INVESTMENT CONDITION FACED BY GAS INDUSTRY IN CONNECTION WITH THE DISTRIBUTION SYSTEM AND DEVELOPMENT OF NEW TERRITORY—BY W. J. BERTKE..... 27

MERCHANDISING GAS 30

EDITORIAL 31

NEWS OF THE GAS INDUSTRY..... 33

PERSONAL NOTES 43

CONSTRUCTION NOTES 44

As the Journal Views It

The 5,000 Population Town a Good Gas Territory

Some time ago a gas company in a town of approximately 5,000 population, of which about one-tenth were consumers, after hobbling along for some years, shut up shop and quit.

Another proof, we were told, that a town of this size is not big enough to support a gas company. Yet there are such populations where gas companies are doing tolerably well. And in this particular territory there is located a big cannery, where industrial gas even at a dollar-fifty rate would be an unquestionable boon. There are, in addition, a big cast-iron foundry and other industries. The fact that none of these were considerable consumers explains to a degree why the company, which is now shut down, could not make a go of the business.

The president of the American Gas Association recently sent out a call for men of vision and with their feet on the ground. Doubtless the majority of his hearers went away with the impression that he was thinking of the needs of the big gas companies—gas companies of the kind he himself represents.

As a matter of fact, while a man of vision is a highly desirable asset to any gas company he is in no degree so essential to the big company as he is to the small company.

Serving a city where it is almost the rule to have forty families behind a hundred feet of street front, some business must inevitably come, however mediocre the management.

In a locality wherein the whole population is hardly more than six big city blocks, wherein disposal of the ashes means little more than filling holes in the yard or the street in front, and wherein the

coal supply is considerably eked out with wood that can be had for the cutting and the carrying, the gas company to get business enough to pay interest on the investment wants a mind of unusual perceptiveness—a man of real vision—at its head.

There is no real reason why a gas company in a small town, particularly a town so blessed with gas-requiring industries as the one we have in mind, should not, with fair treatment as to rates, profit most gratifyingly.

A reason why many small companies have gone under is that they have been penny wise and pound foolish. They have deluded themselves into the thought that because the reachable population is small anything beyond a hundred-dollar-a-month manager would be altogether out of proportion to the business.

As a matter of fact, a real manager—a man of vision—will get more business out of five thousand people than a truck-horse will get out of twenty-five thousand. It isn't how many you sell to that counts. It is how much you sell to each one of them.

The Dirigible that Crossed the Ocean

An airship, a dirigible, has crossed the Atlantic Ocean. At the moment of writing it is preparing to recross to its home port.

Its navigator is optimistic as to the use of the airship commercially. He expects in the near future a great monster which will carry freight and passengers in comfort and safety.

A short time ago such a statement would have at least given rise to questions. To-day no one stirs himself to dispute it.

If such things come, from present indications the fuel for the ships will be gasoline or similar light oil.

When the propulsion of transoceanic traffic is added to the already rapidly augmenting demand for gasoline, it does not take much stretch of the imagination to locate the approximate period when, however much the world produces, gasoline must inevitably fall far short of the demands made upon it.

Yet there are those short-sighted enough to advocate junking light oil plants already erected at gas plants on the grounds that their products, including benzol, might be a drug on our hands.

They're Going Up

A short time ago we were dazzled by the estimates of the new dwellings that were to be built. Then came silence. Was it, after all, another big powwow about something destined never to transpire—like the bridge of wooden ships early in the war, the cluster of chasers that were to exterminate the submarine, the successive prophecies of catastrophic undersubscriptions to the various Liberty Loans?

We do not think so. We have seen no complete or in anywise general statistics, but everywhere we have gone we have seen houses going up.

Are the gas companies also seeing them? Or are they awaiting the published statistics?

Appliances are selling. They should continue selling at an increasing rate.

We may not be actually upon the threshold of boom times. But business is picking up. Those who have their eyes open are doing tolerably well.

Are we numbered among them? Or are we among those who are still waiting?

Ex-President Taft Says Municipal Ownership Will Not Relieve Utility Situation

(*Continued from page* 29.)

"Many who favor municipal operation admit that the present system cannot be continued by municipal and State governments without a constant loss. They propose that the losses be made up by taxation. The theory is that as the community is taxed to build roads and bridges and other means of communication, the same principle might easily be extended to actual transportation.

"But our experience in public control of that kind of activity and complicated business management has not been fortunate. It foreshadows such lack of economy and increase of cost of operation as to make the change most unwise.

"It is far better that we should pay as we go. It is far better that we should measure the cost by a system of service at cost, with close public supervision and an increase of fare as small reasonable compensation for the use of capital, than that we should turn over to political control the conduct of such business enterprises which need best talent for their economical management."

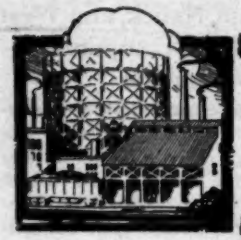
Public Utility Credit Must Be Maintained

The Illinois Committee on Public Utility Information, which has been making an exhaustive study of utility credit, makes the following statement:

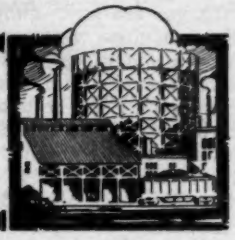
"Because of the extraordinary capital demands of the industry and the heavy investment necessitated in every community obtaining electric, gas, telephone, water and street railway service it is clearly apparent that nothing must be done that will affect the credit of these companies. Unless the companies are treated fairly by the communities they serve they cannot go into the money market and obtain the funds necessary to keep pace with normal development and render the efficient service which every citizen has a right to expect.

"No industry makes as great a permanent investment toward the upbuilding of the community as the public utility industry. A rightly financed, properly managed and fairly regulated public utility company is as stable and enduring as anything that can be found in the business world.

"Supplying daily necessities more and more in public demand, growing as communities and industries grow, necessarily equipped with a large amount of valuable, tangible property, staked, tied to and embedded in the soil, these companies are urban and interurban fixtures. They have no years or seasons of shutdown due to poor business; they must furnish continuous and unending service."



NEWS OF THE GAS INDUSTRY



Increased Production Need Brings in New Uses for Gas

Gas Used Now for Soldering Tin Cans; Also in Lithographing Labels

The increased need for production which is beginning to make itself felt with the reopening of world commerce is sharpening the efficiency methods of many Illinois plants. A very evident change which is coming about is the variety of uses to which gas is being put, and the substitution of gas for former awkward methods of heating.

An Illinois public service company recently called attention to a novel use of gas in the soldering of tin cans. The high heat necessary for this operation has previously caused considerable waste, but by the new method the flame is concentrated into a point like a pencil, and applied to the seam of the can by pressure. A great saving in time and heat is thus accomplished.

Another new use of gas is in the lithographing of labels. The process involves ovens, which usually are heated by coal and other fuel. The Illinois plant which has changed the heating of these lithographing ovens from the old method to the use of gas reports that a saving of four hours out of six is accomplished.

American Chemical Exposition Plans Large Gas Heating Appliance Exhibition

A feature of the American Chemical Exposition which will be held in Chicago, September 22 to 28, wi'l be a mammoth manufacturers' exhibition of gas and other heating appliances. The American Steel Treating Society, a considerable percentage of whom are strong advocates of the use of gas in the processes of heat treating, will have an exhibit at the exposition, coincident with their annual convention. At the sessions of the society various technical aspects of the profession will be discussed. The exposition, which comes to Chicago for the first time, after several annual terms in the Grand Central Palace, New York, will be held in the Coliseum, and the adjacent First Regiment Armory. Several other societies besides the Steel Treaters' will hold their conventions during the week, and preparations are already on a vast scale. Among the advisory committee of the exposition are the following: Charles Herty, chairman, editor of the *Journal of Industrial and Engineering Chemistry*, Raymond F. Bacon, director of the Mellon Institute; L. H. Barkeland, member of the Naval Consulting Board; W. D. Bancroft, president of the American Electrochemical Society, and William H. Nicholas, president of the American Chemical Society.

Gas Distributing System for New Naval Air Station

The installation of a complete gas distributing system is planned in the permanent construction work and new buildings to cost in the neighborhood of $1,000,000 that have been ordered for the North Island naval air station at San Diego, Cal., by the bureau of yards and docks, and preliminary work will commence early in July. Bids for $500,000 worth of permanent work were called for yesterday and will be opened next month. Called for by the proposals are the erection of a two-story 70-room administration building; installation of a conduit electric light power and street lighting system; assembly of a huge kite balloon hangar.

Cadillac Obtains Higher Rate

The City of Cadillac, Mich., will grant the proposed increase of 25 cents per 1,000 ft to the Cadillac Gas Company as there isfear that should the company take the matter to the State Public Utilities Commission that body would grant it more than the amount asked for. It was shown that the gas company has never paid a cent of dividends.

Thousands of Dollars Saved as Result of Experiments in Rochester Railway & Light Chemical Laboratory

As a result of the changes brought about by the war, the Rochester Railway & Light Company of Rochester, N. Y., has one of the best equipped chemical laboratories of any gas company in the State outside of greater New York. Until the beginning of the present year, the laboratory was located in very inadequate quarters. In January it was moved to its new home at the East Station, Rochester. Here it occupies two large rooms over the machine shop of the construction department, and a smaller room in the yard where the crushing and sampling is done.

One of the rooms, known as the west room, contains most of the paraphernalia by which daily and even hourly check is kept upon the operation of the gas works. Here are the gas calorimeters in their cabinets, where the heating value of one or another of the gases is determined every hour of the day and night. Here is the gas analysis outfit, which might be called the interpreter, since from its results the superintendent can understand the reasons for fluctuations in the heating value and candle power, and can also explain the effects of changes in the operating conditions. Here is the dew point apparatus, whereby is told the lowest temperature to which the gas has been subjected in the mains; the hygrodeik for telling the percentage of humidity in the air and the barometer for determining the atmospheric pressure.

The volume and variety of the work required of the laboratory is a constant source of surprise to those not in close touch with its activities. As an illustration, since the 17th of February when the new set of records was started, there have been over five hundred and twenty samples brought into the laboratory for test, not to mention routine tests, such as

Btu. gas analysis, candle power, etc. Some of these tests could be finished in a few minutes, while others took several weeks. Of this number the greater part has been coals, oils and carbides. Concerning the routine tests, the yearly schedule calls for 19,710 Btu. tests, 1,095 candle power determinations, about 300 dew point tests, and between 700 and 1,500 gas analyses. In addition to the above, since February 24 the members of the force have spent over two hundred and fifty hours in work outside of the laboratory. Such work has included special investigations at the gas works. and the analysis of flue gases at various factories and hotels in connection with the sale of coke.

As to the value of the work the company claims it is not going too far to say that very many thousands of dollars can be saved by any company which makes intelligent use of the results obtained in a well-equipped chemical laboratory.

Alliance, Ohio, in Critical Situation Because of Need of Gas

The critical situation as to a supply of gas for the city and the imperative need of the city officials acting expeditiously in an effort to secure such supply was emphasized at a meeting of the city council of Alliance, Ohio, when the subject was discussed at considerable length. At the opening of the meeting City Auditor Silver read three communications which had been received by Service Director McConnell in response to the advertisement published by the director several weeks ago asking for proposals for the furnishing of natural or artificial gas for the city. The East Ohio Gas Company stated that, owing to the depreciation of the gas fields, it was not in a position to bid on natural gas and, as it had no artificial plant within the limit of the city, it could not contract for manufactured gas. The communication was signed by M. B. Daly, president of the company.

Nashville Company Petitions Rate Increase

The Nashville Gas & Heating Company filed a petition with the Public Utilities and Railroad Commission asking emergency relief and to be allowed to make a service charge or advance its rates outright.

N. J. Utility Board Stops Rate Increase Petition

Following the announcement of the Public Service Gas Company, of Trenton, N. J., that the rates would be increased from ninety-seven cents to $1.15, the State Board of Utility Commissioners issued an order preventing the increase, pending a hearing on July 16. This will take place at the offices of the board in Newark, N. J. The gas company contends that, under the law, the Utility Board has the right to increase rates unless suspended. The new schedule averages a base rate from ninety-seven cents to $1.15 and graduates down to eighty-five cents, according to the quantity of gas consumed.

Public Service Company of Northern Illinois Has Progressed Despite "Public Bombardment"

The Public Service Company of Northern Illinois has increased both its net and its gross earnings. In spite of the "rough weather" which public utility companies have experienced during the war, notwithstanding the enormous increase in costs which have had to be met, most of the utility companies have managed to avoid any great curtailment of their income. But the Public Service Company of Northern Illinois has done better than that. The record of earnings of the company for the last eight years shows a steady increase, which continued uniform during the years of war and public bombardment. The company serves the territory surrounding Chicago on the north, south, east and west. Its field includes also fifteen counties in the northeast part of the State, whose population totals nearly 800,000, spread out over some 182 towns and cities. The soundness of the company's condition, and its present prosperity, are credited to the good judgment of President Samuel Insull, who has been described as the "utility king" of Illinois. The earnings of the company, beginning the year before the war, are as follows:

Year	Gross Earnings	Oper. Expenses and Taxes	Net Earnings
Year ended Dec. 31, 1913	$6,066,825	$3,590,100	$2,476,725
Year ended Dec. 31, 1914	6,656,899	3,656,685	3,000,214
Year ended Dec. 31, 1915	6,903,228	3,749,370	3,153,858
Year ended Dec. 31, 1916	7,783,157	4,508,483	3,274,674
Year ended Dec. 31, 1917	8,797,765	5,309,333	3,488,432
Year ended Dec. 31, 1918	9,218,884	5,583,954	3,632,930

Framingham, Natick, and West Boston Gas Companies to Combine

The gas and electric light commission received a petition from the Framingham Gas, Fuel & Power Company, the Natick Gas Light Company and West Boston Gas Company, asking for authority to consolidate under the name of the last-named company. The petition shows the capital stock of the Framingham company is $75,000 and its indebtedness $60,785.47; of the Natick Company, capital stock, $59,600, indebtedness $52,618.20; of the West Boston company, capital stock $175,000, indebtedness $64,000. The petition asks that any impairment found in the West Boston company, not to exceed the amount of $30,000, be eliminated by reducing the capital stock of the other two companies. It asks that the capital of the new company be placed at $279,000 permitting the issuance of 1,046 shares of common stock at a par value of $100. Of these 1,046 shares, 582 or more are to go to the Framingham company and 464 to the Natick company. The petition also asks for authorization of an issue of $250,000 in 20-year gold bonds, dated Oct. 1, 1919, at 6 per cent. Of this amount $177,000 is to fund the indebtedness of the companies, and necessities to be determined by the commission. The West Boston Gas Company has been supplying gas to the Framingham and Natick companies.

Massillon, Ohio, to Get Gas for Ten Years

Residents of Massillon have practically been assured of gas by the East Ohio Gas Company for another period of ten years. The gas franchise adopted by the council provides for an increase in rates over the present franchise, which expired June 30. The rates of the franchise are: First 5,000 cu. ft., 48 cents; between 5,000 and 10,000 cu. ft., 53 cents; between 10,000 and 15,000 cu. ft., 58 cents; all over 15,000 cubic feet, 63 cents. A minimum rate of 2,000 cu. ft. has been included in the franchise.

Experts Appointed on Wage Question of Worcester Company

Experts, representing employers and employees, were appointed at the hearing before the State board of conciliation and arbitration in the common council chamber in the case of the Worcester Gas Light Company, and the employees and company presented their contentions. The employees asserted that Lowell's rate of wages is higher than Worcester's, and that the Worcester rate should be increased. The contention of Worcester Gas Light Company was that taking the New England cities in the class of Worcester, with the exception of Lowell, the wages paid by the company are fully as high as the average and higher than in some of the cities. It was asserted that conditions in the Lowell case are abnormal. Schedules were submitted by Worcester Gas Light Company, of the wages paid in the New England cities, which schedules will be used as a basis of investigation by the board and the experts. The statement of the company through its counsel, is that the demands of the employees, if granted, would mean about $150,000 annual increase in cost, which would mean an increase in rate to the user of gas of 15 cents a 1,000 cu. ft.

Peoples Company Launches "Good Work" Contest

A plan for stimulating good work in the collection and supervision departments of the Peoples Gas Light & Coke Company, of Chicago, has recently been developed. Cash prizes running as high as $70, and totaling $1,200, are offered for excellent work by employees in this field. Collectors will be marked up on a point system, and justifiable complaints as to their service from customers or from the company will result in the deduction of points. The competition started June 25th and will continue until August 31.

Nashville Company Asks Emergency Relief

The Nashville Gas & Heating Company has filed a petition with the Public Utilities and Railroad Commission asking emergency relief and to be allowed to make a service charge or advance its rates outright, which would mean the same thing.

Indiana Report to Be Considered by City Officials

Most Exhaustive and Scientific Study of Gas Question Ever Made in This Country

Paul P. Haynes, member of the Public Service Commission, who instituted an exhaustive investigation to learn the most economical and efficient heat standard for gas, announced that the commission would call a conference of city officials and representatives of gas companies within a short time to consider the report made by the investigating committee. H. O. Garman, chief engineer for the commission, and chairman of the gas investigation committee, submitted the report to the commission on July 2. The investigation by the committee was concluded May 20 after engineers representing the commission, the gas companies, the Indiana cities and the Federal bureau spent several months making actual tests in a number of Hoosier coal gas plants. The recommendation of the committee was that 570 British thermal units be accepted as the heat standard for gas. Mr. Garman explained that 570 Btu. was the most economical and efficient both from the viewpoint of the producer and the consumer. Since the adoption of the report it has been submitted to the Bureau of Standards for inspection, S. W. Stratton, director of the bureau, in returning the report told the commission that the Federal bureau concurred in the findings.

The investigation in Indiana is said to have been the most exhaustive scientific study of the gas question that has ever been undertaken in this country. It was instituted last fall just before the signing of the armistice, but was continued after hostilitise ended in order to determine a peace-time standard for normal times.

Reno, Nev., Power Enters Plea for Higher Rates

The Reno Power, Light & Water Company has asked the Public Service Commission for permission to raise the price of gas 45 cents per 1,000 cu. ft. The present rate in Reno is $2 per 1,000 cu. ft. The gas company asserts high costs of labor and materials justify the desired advance. Advices from Reno are to the effect the raise will be contested by the citizens.

Memphis Company's Officials in Conference on Rate Petition

A petition for an increase in gas rates, now being drawn up by officials of the Memphis Gas & Electric Company, of Memphis, Tenn., will be soon completed and presented to the City Commission and the State Public Utilities Commission, according to C. K. Stieg, vice-president of the company. W. M. Flook, of New York, president of the company, is in Memphis conferring with local officials of the corporation. He made no statement regarding the proposed raise in gas rates.

In presenting its petition to the City Commission and the Public Utilities Commission the gas company will set forth a statement of its financial standing upon which the plea for a tenth of the advance to be asked for has not yet been definitely decided upon. It is for the purpose of determining this that the officials are holding conferences. The company contends that under the existing rates it is impossible to meet operating expenses, taxes, and interest on outstanding bonds. The question of capitalization and dividends does not enter into the problem, it is stated by the company. The present gas rates are as follows: $1 per 1,000 cu. ft. per month per meter; 80 cents per 1,000 cu. ft. for all over 2,000 cu. ft. consumed. A minimum charge of 60 cents per month is made.

Coke Conveyor at Atlanta Shows New Idea

Bricks form the wearing surface of the coke conveyor recently rebuilt at the gas works of the Atlanta Gas Light Company, which has been in operation for several weeks past. This plan was carried out in lieu of the original purpose to line the bottom of the conveyor with railroad iron. It is believed to be a much better arrangement, the conveyor being resilient, water-tight, more or less proof against rust, and its wear being concentrated on a surface which can easily be replaced. The whole bottom was lined with brick whose own bottoms were molded with longitudinal flanges that lifted them above the floor of the channel. Hot pitch was poured into the cracks between the bricks and filled not only these but the channels between the projections on the bottom. thus giving the necessary elasticity with the other good qualities just mentioned.

Peoples Hearing Closed July 2

Decision Expected July 31

The long series of hearings in the rate case of the Peoples Gas Light & Coke Company before the Illinois Public Service Commission came to an end July 2. Briefs will be filed in the case July 15, and the oral arguments by the lawyers of the company, city and State, will be heard July 17. The commission must make its decision before July 31, the date on which the present emergency rate of 88 cents per thousand cubic feet expires.

Closing evidence by witnesses for the company under cross-examination brought out the fact that the highest earnings of the company were in 1917, and represented 9 17/100 per cent of the capital stock. W. A. Sauer, chief accountant for the company, presented the figures for this and other data. The depreciation fund maintained by the company, he said, is about 1 per cent of the capital stock, or $1,000,000 a year.

Fire at Gas Plant in Seaford, Del.

Excitement prevailed when fire was discovered in the plant of the Sussex Gas Company's plant, West Seaford, Del. The fire started when the blower back-fired and in a moment the whole interior of the plant was in flames. Floyd Mullin, manager of the plant, was in the building and immediately sounded the alarm, which was quickly responded to by the local volunteer fire department. Before the firemen reached the scene the fire had gained considerably, but was soon under control and extinguished within an hour or so. As soon as the flames were extinguished extra men were put to work getting the plant in condition to keep on making gas, and notices have been sent out that all the towns would have their regular gas supply on Thursday. The exact damage done it not yet known, but it is estimated at about $1,000. The plant furnishes gas for Laurel, Bridgeville, Delmar and Seaford and the majority of people in all these towns depend solely upon this means of heat for their cooking. With the aid of an emergency engine the company was still able to furnish Seaford with gas, but was forced to shut the gas off in the other towns temporarily.

New Gas Field Discovered in State of Washington

There are untapped gas fields in Benton county, Wash., between the Columbia and Yakima rivers, vast enough to supply illumination for Seattle, Spokane, Portland and Tacoma combined, according to Herbert C. Harris, a Spokane business man, stopping at the Butler. Gas was discovered there some time ago, he said, by engineers putting in a series of artesian wells, but not until recently, he explained, has any effort been made to develop the field. The gas is of such quality as to produce four pints of gasoline per 1,000 ft., Mr. Harris said, and four incorporated concerns are now undertaking the work of commercially developing this natural resource. A yield of oil in paying quantities also is expected, he asserted. The region rich in gas, Mr. Harris said, is northeast of Prosser and about 120 miles southwest of Spokane.

Brooklyn Borough Company Asks to Turn Over Its Mains

Application was made by the Brooklyn Borough Gas Company, before the Public Service Commission to turn over its gas mains, meters and accounts in the Thirty-second Ward to the Brooklyn Union Gas Company. The appellant's plant, it was stated, is so far away from the territory, that the plant of the Brooklyn Union Gas Company could handle the accounts more satisfactorily.

Central Illinois Company Wants $250,000 Bond Issue

Application for the authorization of a $250,000 bond issue by the Central Illinois Public Service Company is now before the State Public Utilities Commission, and will come up for hearing under Commisisoner Lucey. The company is requesting authorization for the issue of $250,000 of its first and refunding mortgage gold bonds, and $200,000 of its general mortgage gold bonds. A supplemental application has been filed for authority to issue and dispose of its first and refunding mortgage gold bonds in the principal amount of $110,000 and to sell the same at not less than 75 per cent, and to issue and dispose of its general mortgage gold bonds in the principal amount of $39,000 and to sell the same at not less than 80 per cent of par and accrued interest.

Rochester Company Successfully Meets a Problem Arising from an Accident

Under stress of a peculiar chain of circumstances, the locomotive crane at West Station of the Rochester Railway & Light Company, rolled over one day in March and toppled off the track against the coke pile. The operator was not hurt and the machine suffered no particular damage. Under the supervision of A. H. Lamey, it was righted and reassembled and is now in regular operation again. Coke sales demands were rather heavy at the time and some anxiety was felt, at first, lest the company should be unable to recover coke from the yard rapidly enough to meet requirements. But this problem was successfully met by using the small gasoline crane and one of the company's dumping trucks. The coke was reclaimed from the pile into the truck by means of the crane. The truck was then backed around and dumped upon the coke wharf whence it fed in the ordinary manner into the conveying system and thence to the screens and bins. By this scheme, instead of falling behind coke was reclaimed at the rate of 100 tons per hour or twice as fast as the conveying system could carry it away.

Louisville Gas Forfeits Its Bond

Company to Take Case to Court of Appeals

Forfeiture of the bond of $250,000 given by the Louisville Gas & Electric Company six years ago to guarantee faithful performance of its contract to furnish an adequate supply of natural gas to citizens of Louisville, was ordered by Judge Charles T. Ray, and a judgment was entered in favor of the city for that amount. Counsel for the gas company announced that the case will be taken to the Court of Appeals for a review of the many rulings heretofore made by Judge Ray. The company has sixty days in which to prepare and file a bill of exceptions in the higher court. Judge Ray said it was admitted by pleadings filed by the gas company that equipment proved to be insufficient to furnish Louisville with its required amount of natural gas during the winter of 1917-1918, at the time the city needed the fuel most and that the company had never possessed the capacity, power or means to fulfill its franchise obligations.

Northern Illinois Company Obtains Industrial Gas Business for New Purposes

The Public Service Company of Northern Illinois reports that preparations which they are making for extensive export trade has had the effect of largely increasing the demand for gas in the plants of its customers. In connection with it the company says that some uses of the fuel have developed with results that are remarkable. One of these employments is in soldering tin cans. High heat and its direct application are requisite and with the best appliances available ordinary methods cause considerable waste of heat energy. A small gas burner has been devised by means of which a pencil-like flame is directed by pressure at the seam of the can. There is no diversion of the heat and it is found that a large increase in the capacity of the soldering machines follows. Labels in all languages are lithographed in one or two of the plants referred to. The process involves ovens, which are now heated by gas. It is calculated that as much work is accomplished in the gas-heated oven in two hours as in six or more under the old practice.

Iroquois Company Cannot Guarantee Delivery of Gas After December 31

The Olean Board of Education of Olean, N. Y., is alarmed by the danger of a natural gas famine here next year. The Iroquois Gas Company, which supplies Olean with gas, has notified the Keystone Gas Company, the distributing company here, that it cannot guarantee to deliver gas after December 31, 1919. The Board of Education has ordered its building committee to proceed at once with plans for the erection of a coal heating plant for the high school which is now heated entirely by gas. The other schools are heated by coal furnaces.

A. G. A. Studying All Phases of House Heating

The American Gas Association has, through its commercial section, appointed a heating committee. The particular function of the latter is to thoroughly examine all phases of the subject of house heating by gas, it being conceded that it constitutes one of the big prospect fields of the future. There are seventeen members of the heating committee, which represents in its personnel all sections of the gas industry as well as all parts of the country. Each man is in fact appointed because of his special experience. The committee is sending out to all member companies of the American Gas Association requests for full detailed information as to house heating installations in the company's territory. The data sheet when complete, it is expected, will furnish such an answer to the general problem as will enable the committee to make suggestions concerning the best method of creating and handling this expected new business. The committee's report, it is hoped, will be in readiness to present at the first annual convention of the American Gas Association to be held in New York this fall.

Operation of Municipally Owned Gas Plant Cost $28,000 This Year, Compared with $11,000 Last Year

The cost of operating the municipally owned gas plant at Danvile, Va., has within a year taken a considerable jump, according to figures on the fiscal year prepared by the superintendent of public works. Last year's report showed that it cost the city $11,000 to operate the plant and this year it has taken $28,000. The high cost of coal and material and the large concessions which had to be made to the force of laborers in salaries to induce them to remain at work are the main causes of the great increase. Notwithstanding the great increase gas has not gone up in price in Danville although it is understood that certain members of the city council are considering recommending an increase.

Larger Consumption of Gas Is Noted in Factory Districts

The Industrial Gas Department of the Public Service Company of Northern Illinois has made a recent survey of consumption of industrial gas which shows an increase as to the greatest percentage of manufactories using the fuel. In the aggregate the increase runs into exceedingly impressive figures. The meaning, of course, is that the plants in the great manufacturing districts served by the company are getting into a new stride and are doing more business.

$1.70 Rate to Continue at Saratoga Springs, N. Y.

Commission's Opinion Even This Rate Does Not Allow but 5 or 6 Per Cent

There will be no change in the price of gas in Saratoga Springs for at least another year, the Public Service Commission having issued an order fixing the maximum charge at $1.75 per 1,000 cu. ft., subject to 10 per cent discount for prompt payment, this being the new schedule which has been in operation since August 15, 1918. The present action of the Commission was taken on the application of John A. T. Schwarte, acting mayor of the city of Saratoga Springs, who alleged that the increases in gas rates to customers in the city, effective August 15 last, are unreasonable and asked the Commission to fix a maximum reasonable rate. The opinion further states that even under the new schedule the company cannot hope for a greater return than 5 or 6 per cent upon the investment. Under these circumstances the commissioners believe that the present rate is entirely justified but orders that it may not be increased for one year from May 31, and then not until further order of the Commission.

Illinois Gas Association Promoting Utility Publicity

The Illinois Gas Association is lining up its forces behind the efforts of the Illinois Committee on Public Utility information to establish the public utility business more firmly in the favor of the public. The association members are planning to co-operate with the committee, which represents the great public service corporations of the State jointly, by enlisting the interest of their fellow townsmen in the utility problem. It is planned to schedule discussions of the subject in the various commercial associations, rotary clubs, women's clubs, and other organizations of Illinois towns and cities, and to spread the information compiled on the public utility business as widely as possible.

Oklahoma Natural Declares Extra Dividend

The Oklahoma Natural Gas Company has declared a quarterly dividend of 50 cents a share and an extra of 12½ cents a share, payable July 21.

Southern Counties Company Buys New Franchise

Some six years ago the Southern California Edison Company bought a franchise from the City of Chino, Cal., for a gas distributing system which was later taken over by the Southern Counties Gas Company. The original franchise was for 25 years but through an oversight no provision was made for extensions to the system as was outlined in the original franchise. This was not discovered until a couple of months ago when the Southern Counties Gas Company applied for a permit to extend their system. City Attorney Homan looked the matter up and found no provision for a permit. To clear the matter up the trustees ordered another franchise sold which has been bought by the Southern Counties Gas Company for $100 and runs for twenty years. The hundred dollars goes to cover the expense of publication of the notice to bidders and the franchise ordinance and the deal will net the city something like $50 above expenses.

Coast Counties Company Will Use Surplus

Conforming with a ruling made by the State Railroad Commission some two weeks ago, the Southern Counties Gas Company has filed with the commission an agreement to the effect that the company would pay from its surplus earnings the difference between $825,000, the purchase price of the properties to be purchased from the Santa Barbara Gas & Electric and Southern California Edison companies, and $620,000, the amount of the bonds the commission will permit the purchasing company to issue. It wanted to issue bonds to the full amount of the purchase price.

Muskegon Rate Increase Ruled Illegal

Judge William B. Brown, of Grand Rapids, Mich., ruled that the Muskegon Traction & Lighting Company may not legally increase its gas rates, because an ordinance was passed by the city to keep the rates at their old position, which ordinance was accepted by the company. Unless the company appeals its case against the city from now on the city will be able to use gas at $1.20 with a 20 per cent discount if bills are paid when due, instead of the $1.40 per 1,000 ft. with but 10 per cent discount

Earnings of Washington, D. C., Company Improve

After two lean years, during which it has been able to earn only about 50 per cent of the dividend it paid in former years, the Washington Gas Light Company apparently has "turned the corner" and has a fair chance of retrieving some of its losses. For the first time since Congress reduced the price of gas to 75 cents, in October, 1916, the company earned during the months of April and May an amount equivalent to its former dividend requirements. The reports on earnings, which are made each month to the public utilities commission, show that in April the company earned $54,652.74, and that in May the earnings were $56,505.70.

St. Paul Company's Office Building Damaged by Fire

Fire, of undetermined origin, damaged the building and contents of the St. Paul Gas Light Company to the extent of $10,000 or $12,000. The blaze was discovered in the basement at 9.30 p. m. by the night watchman, apparently starting in a supply of stationery. Smoke made the blaze difficult to fight. The flames burned through the basement into the first floor in the rear of the building. The building was damaged throughout by water and smoke and Edward Bednar, a fireman of Hook and Ladder Company No. 2, was overcome by smoke. The company had just moved into the building in April of this year.

Syracuse Company Wins Verdict in Damage Suit

Mrs. Louise Ryan will receive no damages for suffering burns caused when she was lighting her gas stove and the flames ignited her clothing. A supreme court jury reported a verdict in favor of the Syracuse Lighting Company. During her testimony Mrs. Ryan said when she touched the lighted match to the jet the flames leaped across the stove and came in contact with escaped gas at the point where the pipe joined the range. Then the flames struck the wall behind the stove, rebounded and set fire to her clothing. Her arms and chest were badly burned. George W. O'Brien and Emmet B. McDonald of White & Shinaman appeared for the lighting company.

Standard Gas Developing Shaffer Properties

Arthur S. Huey, vice-president of the Standard Gas & Electric Company, states that the properties of the Shaffer Oil & Refining Company, which it recenty acquired, now form a complete cycle in the production and marketing of oil. The company has over 57,000 acres of oil lands in Oklahoma and Kansas, of which it is operating 6,789 acres. Sixteen gas wells are being operated, and 391 oil wells, with a production of about 4,000 daily.

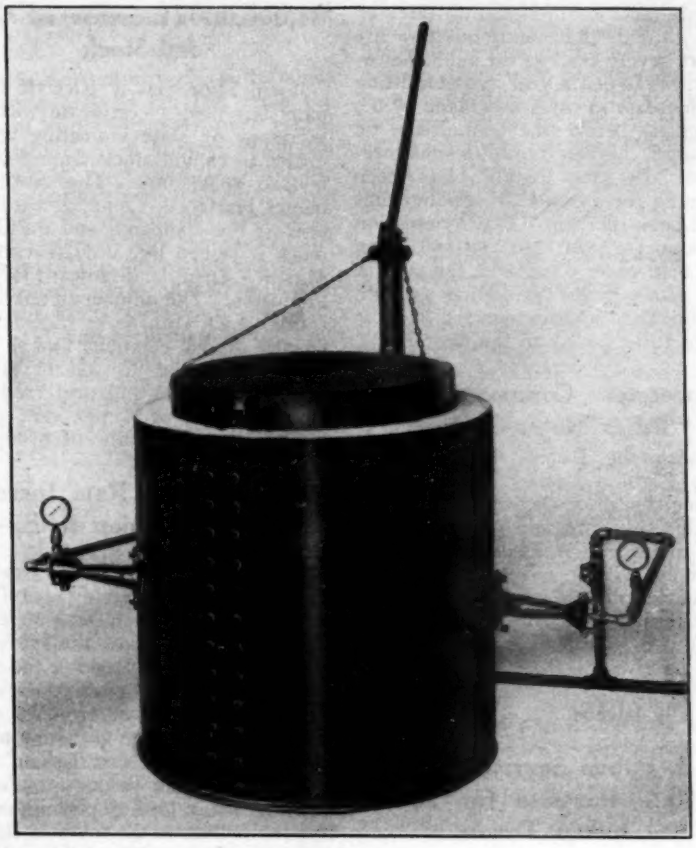
The transportation facilities of the company include 100 miles of gathering lines with field stations, and 52 miles of main pipe lines. The Cushing refinery has a capacity for 6,000 barrels daily, and manufactures in addition to gasoline the various by-products of paraffine base oil. The management of the Shaffer company, while it has taken over the entire staff of the old concern, is now augmented by the engineering, construction and accounting force of the Standard Gas Company.

Technical Section of A. G. A. Will Report on "Disposal of Waste from Gas Plants"

The Technical Section of the American Gas Association has organized several new committees, including one which is to make a report on the disposal of waste from gas plants. The work of the new advertising section which was organized late last month will be particularly to distribute information concerning the achievements of gas as a fuel in manufacturing. Preliminary activities in this direction have resulted in the publication of much interesting material in technical magazines, which has inspired many inquiries by manufacturers heretofore unfamiliar with the value of gas.

Reading Company Makes Service Charge

Notices are now being sent out by the Consumers Gas Company, Reading, Pa., that on and after July 1 a service charge of from 25 cents to $1 will be made each month in addition to the regular charges for gas consumed. From the office of the company the statement was made that this is a continuation of the extra charge for another year due to the high cost of coal, oil and other supplies.



HIGH PRESSURE GAS BRASS MELTING FURNACE

New Furnace Eliminates Independent Judgment of Operator

Modern methods of iron and steel production demand exacitude in all departments; but in none more particularly than in heat treating.

In the use of steel, where the variation, at the critical moment, just above and below the decalescent point permits only the slightest variation of heat degree, the furnace itself should be so designed that the temperature can be constantly maintained without danger of spoilage of the product.

To meet this emergency, automatic controlling devices, more or less expensive, both in construction and application, and subject, in operation, to the judgment of the operator of the furnace, have hitherto been the only available method by which exactitude could even be approximated.

The demand for the furnace for the heat treating room, has been one of automatic mechanical control, relieved from the question of human equation.

With the experience of many years in the development, uses, and application of high pressure gas, in Europe where it has been much longer used, and in the United States in the past few years, the engineers of the Needham Gas Appliance Company have developed a type of furnace that, with the use of high pressure gas, automatically and with practical accuracy, controls the gas pressure without constantly changing the mixture of air and gas, and subject, in no instance, to the judgment or control of the operator. With this furnace, the gas pressure is maintained at all times uniformly; the ration of air and gas is constant, and, by the operation of one valve, controlling the pressure at the burner, by the air of a gauge, temperatures can be set to be maintained accurately without the slightest variation.

These furnaces were primarily designed especially for use with the Needham High Pressure Gas System; but to meet requirements of many companies which have high pressure gas in their plants, or which they operate, these furnaces can be installed where such pressures exist, without the installation of the compressor machinery. Where low pressure gas only is used, it is, of course, advisable to install the complete equipment, in order to produce the most satisfactory results.

In one large plant where many hundreds of heat treating furnaces are in use, the Needham System has been installed. (It was essential that in this plant an absolute control of temperature should be assured, and that a very simple method of control should be available.) The furnaces were converted so that when the full pressure of the gas was delivered to the burners, the furnace would heat up the required temperature within one hour. It was so arranged that by reducing the gas pressure by a single valve, any desired temperature could be accurately maintained. As in this case, a slightly neutralizing flame was necessary. Inspirator was adjusted to accomplish this result, and this mixture was maintained at all times, irrespective of the desired temperature or the volume of gas flowing into the furnace.

Carlisle Gas Company May Build Houses for Employees

The Carlisle (Pa.) Gas & Water Company is considering a house building plan suggested by Markle Landis, treasurer of the Carlisle Trust Company for housing the Carlisle gas employees. The Landis plan provides that the Carlisle Trust Company shall furnish the money for the building of houses needed by the employees, the gas company guaranteeing to secure the trust company from loss in the building project and also the interest on the money involved. The first batch of houses will be fifty in number and will be scattered throughout the whole of the community, using the best available locations. The plan which will be available to any cities, manufacturers or banks which care to ask for it, does not necessitate the tying up of money by industrial organizations and provides an outlet for lots of idle capital.

Higher Rate Petitioned in Bath, Maine

The Bath & Brunswick Light & Power Company has filed with the Maine Public Utilities Commission a revision of its schedule of gas rates for the territory which it serves, proposing an increased rate, effective on July 31, 1919, of $2 per 1,000 cu. ft., with a provision that a discount of 10 cents per 1,000 cu. ft. be allowed for prompt payment of bills. The present rate is $1.60 per 1,000 cu. ft. with the same discount of 10 cents per thousand feet for prompt payment. A minimum charge of 50 cents per month is required under both schedules.

Pacific Gas & Electric Loses $20,000 Damage Suit

Mrs. Mary Kerwin, an Elmhurst, Cal., property owner, was awarded judgment for $21,740 against the Pacific Gas & Electric Company in a condemnation suit before Superior Judge T. W. Harris of Alameda county. Twenty thousand dollars was allowed for damages. Mrs. Kerwin sought $25,000 damages and $1,740 for value of property utilized by the company in erecting four conning towers and stretching high-powered electric wires across her land.

Belleville, Ill., Files Poor Service Complaint

The city of Belleville, Ill., has filed a complaint with the State Public Utilities Commission in regard to the gas service they are receiving from the St. Clair Gas & Electric Company. The complaint covers the quality of the natural gas provided and the rates charged. C. H. Quackenbush, general manager of the company, and Louis Grossman, city attorney, will be the principal figures in the hearing, which will take place at the Belleville court house before Commissioner Shaw shortly. A supplementary complaint has been filed charging an insufficient gas supply.

Order Issued for Higher Gas Rates to Remain Same

Under a decision just announced by the State Railroad Commission of Wisconsin, the Wisconsin-Minnesota Light & Power Company is empowered to continue for another month the schedule of gas rates which have been in force during the past year, or since June, 1918. Application for continuance of the existing rates on the grounds that conditions now are more severe than at the time the order was issued a year ago permitting an increase in rates was made by the company before the commission on June 12, this year, and the announcement that the request has been granted for a period of a month has just been received. The commission announces that it does not feel it can issue an order continuing the present rates for a longer period than a month before the localities affected had the right to be heard on the matter.

Worcester Company Establishes Meter Charge

Beginning July 1 the Worcester Gas Light Company established a meter charge of 50 cents per month. Under this rate any person with a gas meter in a residence or place of business will be charged at least 50 cents per month whether the meter registers or not. But, if the customer uses $7 worth of gas in a year he will be given a rebate for any excess he has paid above the amount of gas actually burned.

N. J. Public Service Petitions Rate Increase for 164 Jersey Towns

Thomas N. McCarter, president of the Public Service Gas Company of New Jersey, has served notice on the people of 164 New Jersey municipalities that an increase in gas rates has been applied for before the State utilities commission. The company now charges 90 cents per 1,000 cu. ft., with an added war surcharge of 7 cents authorized by the utilities board in March, 1918. It will ask permission to increase its rates to $1.15 per 1,000 cu. ft. Mr. McCarter says war prices for labor and coal are responsible.

Consolidated Light & Power Asks Rate Increase

Among the many Illinois gas companies who are finding it necessary to apply for higher rates is the Consolidated Light & Power Company, which is petitioning the State Public Utilities Commission for an increase of rates for gas service in the Galva district, and also in the towns of Kewanee and Wethersfield. The proposed schedule has been filed with the commission, and a hearing in the matter will soon occur under Commissioner Shaw.

$1,000,000 Increase of Capital Stock

Twin State Gas & Electric Company has filed a certificate with the secretary of state indicating an increase in capital stock from $5,000,000 to $6,000,000. The certificate names Hartford, Conn., as the location of the company, and the document is signed by A. H. Bickmore, Martin J. Insull and Howard L. Olds of Boston. The number of shares of capital stock is to be increased from 25,000 shares common and 25,000 shares preferred to 25,000 shares each of common and preferred and 10,000 shares of 7 per cent prior lien stock of par value of $100.

Company Asks Rate Increase and Permission to Extend Lines

The Gas and Electric Light Commission of Massachusetts has received a petition from the Haverhill Gas Light Company asking the price of gas sold and delivered by that company be increased from 90 cents per 1,000 cu. ft. to a figure to be established by the commission, and also one from the Taunton municipal lighting plant asking permission to extend its lines to the town of Berkeley. Hearings will be held.

Emergency Rate for Portland, Me., Extended One Year

A decision was rendered by the public utilities commission ordering that the present emergency schedule of the Portland (Me.) Gas Light Company, effective on and after August 1, 1918, be extended for a period not to exceed one year from Aug. 1, 1919, and that such emergency schedule during such period be subject at all times to revision by the company or by the commission upon complaint or upon its own initiative, after notice and hearing.

THE SOUTHERN COUNTIES GAS COMPANY has filed with the Railroad Commission an agreement to pay from the surplus earnings of the company the difference between $825,000, the purchase price of the gas properties to be acquired from the Santa Barbara Gas & Electric Company, and the Southern California Edison Company, and $620,000, the amount of bonds authorized by the commission in connection with the deal.

Phenomenal Gas Flow Tapped on Ranch

A flow of natural gas, with flames rising as high as ten feet from the ground has been tapped on a ranch, twelve miles from Auburn, Wash., on the Green river, and is attracting much attention from sightseers. News of the phenomenon has created so much curiosity that the present occupants of the place are annoyed by visitors and allow the well to be seen only on special occasions. The gas, it is said, can be lighted at any time and burns continuously until extinguished. The vapor escapes from a bowl-shaped crater, about six feet deep and eight feet in diameter, worn in the clay and rock formation at the top of a 1,600 ft. bore, made about six years ago by a coal prospector. The opening in the bore is partially plugged with a young fir tree trunk, which reaches well up to the top of the bowl. At times the bowl is empty with no sign of water or gas apparent, but without warning a loud rumbling noise arises from the aperture resembling that of an approaching freight train. Those who have witnessed the phenomenon declare that a lighted match dropped in the bowl produces a rush and a roar and flames fill the bowl. The water bubbles and seethes around the plug, continuing in force until the bowl overflows into a nearby stream. All this time the gas burns over the surface of the water, forming a literal "lake of fire," burning for about an hour, when the water gradually recedes until the bowl is empty. The gas continues to burn for hours if not smothered out with fresh water or sacks. The water is said to rise and recede intermittently. Some days it rises every half hour and on other days only two or three times during the twenty-four hours.

Interstate Company Closes Contract with Citizens Gas Company

Beginning July 1, or as soon thereafter as possible, the gas from the wells of the Citizens Gas Company will be distributed through the mains of the Interstate Public Service Company, that company having closed a contract to buy the gas of the Citizen company by meter. The deal has been pending for some time and contracts have just been signed, whereby the Interstate Company buys the gas and then will resell it to gas consumers here. Under the terms of the agreement the interstate company will look after the wells and intends to improve the flow of gas and it is expected there will be sufficient gas here next winter should the supply of gas from the West Virginia field fail, as the Interstate company will get gas from the Enterprise field in addition to the local field.

Gas Fields at Staunton, Ill., on Decline

The gas fields at Staunton, Ill., which have been supplying Staunton, Edwardsville, Collinsville and Belleville with natural gas the last two years are fast becoming exhausted. At the best, with only a moderate use, they will not last more than two or three years. These facts were made known at Edwardsville at a hearing called by the Illinois Public Utilities Commission, which will regulate future consumption. Several weeks ago the service at Belleville was discontinued and plans were made to resume producing artificial gas. H. C. Quackenbush of East St. Louis, general manager of the St. Clair County Gas & Electric Company, said he expected the use of natural gas also would be discontinued at Edwardsville and Collinsville.

Lynn, Mass., Company Refused to Reduce Rate on Expiration Date

The Lynn Gas & Electric Company refused to reduce voluntarily the price of gas in that city to $1.10 per 1,000 cu. ft. on July 1, as requested by the Lynn council. The refusal of the company was made known by President John H. Bartlett in a communication to Mayor Walter H. Creamer, in which the directors of the company made reference to the decision of the State board of gas and electric light commissioners not to authorize any reduction in price while the inquiry into the Lynn situation is pending. A copy of the decision of the State board was included in the letter to Mayor Creamer. The directors explained that in view of the attitude of the State board they could not voluntarily make a further reduction in price. In accord with the view expressed by the mayor that reductions should be made at the earliest time consistent with reduction in the cost of production and distribution was indicated by the directors.

Judge Rules Against City Intervening in Rate Case

The United States Court of Appeals upheld the action of Federal Judge Mayer in declining to permit the City of New York to intervene in the litigation brought by the Consolidated Gas Company to have the eighty-cent rate declared unconstitutional and confiscatory. "This ruling will prevent more than a million consumers from having their interests protected at the trial which begins July 15," was Corporation Counsel Burr's comment when apprised of the decision, "unless the city secures an injunction staying the trial. If it is possible I will obtain that injunction, as the city charter states specifically the corporation counsel shall represent the people whenever their interests are at stake."

Shipbuilding Company Using Gas for Riveting

The Moore Shipbuilding Company will hereafter use Oakland city gas for rivet heating. Tests made by those in charge of the work show that the entire cost of the charge can be saved in a short time by the improved working conditions it furnishes. Park number one has already been furnished with gas. In this park about 20 per cent more rivets have been driven since the gas has been in use, and not a pound of rivets has been burned. The method used is an improved method of utilizing city gas, at a uniformity of pressure, with accurate temperature control, safety, reliability and economy. City gas is automatically mixed in a predetermined ratio with air, in an exact amount to supply the current demand at all times. The mixture thus supplied is practically non-explosive at a low pressure of from one to three pounds and cannot be varied by heater boys. The apparatus starts when the power is turned on and stops when it is turned off. All gas mains have welded points to prevent the possibility of leaks. In case of fire in the yard the power is turned off, and the pressure almost instantly drops to zero. Thus there is absolutely no danger of a gas fire.

HAVERHILL (Mass.) GAS LIGHT COMPANY has declared a quarterly dividend of $1.12½ per share, being at the rate of 9 per cent per annum, payable July 1 on stock of record June 19.

(*Continued from page* 30.

waiting until he can purchase at lower prices, is in my opinion "chasing rainbows," for there exists to-day the basic reason for a higher price level.

" 'In the words of Prof. Irving Fisher of Yale University: "Business men are going to find out that the clever man is not the man who waits, but the one who finds out the new price facts and acts accordingly."

" 'The mantle lamp industry is no exception to the general order or tendency of business, and the evidence that our products are slowly paralleling the tendency of other business activities is daily becoming more apparent.

" 'You salesmen must naturally look to the interest of your trade and hesitate to advise without conviction on your own part, and it is for the purpose of assisting you to advise your trade that I express my views and tell you very forcibly that there is not one chance in a hundred of any reaction in prices of our line; that the tendency is quite in the other direction; that production is, if anything, below average; that the kind of labor we use is scarce, and that what we can produce can only go so far in serving the buying demand, and the very best way to protect your customers is to urge them to place their orders and specify their deliveries. This in my judgment is good, sound advice for you to give and will work to the profit of your customers.

" 'I have tried to give you "Reasons" for believing in prosperity. In the words of Mr. Vanderlip: "Believing in prosperity is its creation." '

"Yours very truly,

"SIDNEY MASON, President."

Gas companies who avail themselves of the services these men can render will be able to get their new maintenance crew organized quickly. This knowledge can be imparted individually or in meeting, as the gas company managers desire.

Securing of Jury for Louisville Case Proving Difficult

Judge Thomas R. Gordon, of Louisville, Ky., ruled that residents of the city of Louisville who were consumers of natural gas in December, 1917, and January and February, 1918, and who suffered an impairment of gas during that period are not eligible to serve on the jury in the case wherein the city is seeking to recover a bond of $50,000 for alleged shortage of gas. Of the first eighteen men called out of the panel of twenty-four a large majority said they were gas consumers and felt the lack of supply during the extreme cold weather of the winter of 1917-1918.

Judge Gordon said it was likely he would have to draw a list of jurors who reside in Jefferson county outside of the natural gas zone in order to get a competent jury, as it would be unjust to the gas company to require any man to sit on the jury who was in any manner interested in the outcome, and that he felt that any one who had suffered from a shortage of gas would be more or less prejudiced against the gas company even though he did receive a rebate from the gas company and that they had perhaps forgotten the incident.

Muscatine Company Loses Rate Case

The city of Muscatine, Iowa, has won the gas rate case, pending in the Supreme Court for many months, according to word received here by the city attorney from Judge Wade. At Fort Madison a refund has been ordered to all consumers who have had to pay in excess of the rate fixed by franchise. Judge Wade holds that a franchise is a contract and cannot be broken or set aside unless both parties to that franchise agree to such a change. Muscatine consumers have paid $1.55 for gas while the franchise calls for a $1.00 scale.

Little Rock Company Objects to Laying More Mains

The Public Utilities Committee of the City Council of Little Rock, Ark., considered the petition of residents of Pulaski Heights asking that the Little Rock Gas & Fuel Company be required to extend its lines to certain territory north of St. Mary's Academy. The petition is signed by 77 persons, representing 105 houses. Officials of the gas company said that the extension asked for in its entirety would require 20,850 feet of main at a cost of $17,039, which, they said would not be feasible. It was thought that some of the extension might be made, and in order that some understanding might be reached between the gas company and the petitioners, further action on the petition was deferred to another meeting.

Serious Gas Situation in Lisbon, Ohio

The Natural Gas Company of West Virginia has notified its gas consumers in the Lisbon district that the price of gas has been raised from 36 cents per 1,000 cu. ft. to 57 cents per 1,000 cu. ft., less a discount of 2 cents per 1,000 cu. ft. on all bills paid on or before the 10th of the month. This rate will apply to gas furnished on and after July 28, 1919, and will be collected for the first time on bills rendered Sept. 1, 1919. The company states that neighboring communities have recently recognized the seriousness of the gas situation, and have sought to meet it. Alliance, the company says, has since early this year been paying 50 cents net per 1,000 cu. ft. for natural gas, but even this they say has not met the difficulty, because Alliance, Ohio, faces the probability of permanently losing natural gas on November 1. The company says the advance in price is necessary because the supply of gas available is fast declining, simultaneously with marked increased cost of production and delivery.

Present Rates to Continue Indefinitely in Indiana

Eight public utilities in Indiana were ordered by the public service commission to continue charging the rates authorized several months ago until further notice. The increased rates were to have expired July 1. The utilities notified are the Northern Indiana Gas & Electric Company, affecting the rates in South Bend, Mishawaka, Fort Wayne, Bluffton and Decatur; Richmond Light, Heat &Power Company, Sullivan County Electric Light & Power Company, and Public Utilities Company, Evansville.

Pacific Gas Financing

In connection with the financing of the Pacific Gas & Electric Company, and as part of the proceedings brought from time to time by the utility, the Railroad Commission issued the following supplemental orders: Permitting the company to issue and sell on or before December 31, 1919, 15,000 shares ($1,500,000) of its 6 per cent first preferred stock at not less than $85 a share in cash, or $1,500,000 of its 5 per cent general and refunding mortgage gold bonds, payable January 1, 1942, at not less than 85 per cent of their face value, plus accrued interest. Permitting the

company to sell at not less than $80 a share, on or before December 31, 1919, 2,122 shares of its 6 per cent first preferred stock. Extending to July 1, 1920, the time in which the company may issue 1,025 shares of its first preferred capital stock in exchange for each share of its original preferred stock still outstanding.

STANDARD GAS & ELECTRIC COMPANY'S annual report for the year ended Dec. 31, 1918, discloses a balance after taxes and charges of $788,743, equivalent to $3.34 a share earned on the $11,784,950 of preferred stock, against a balance of $873,305, or $3.71 a share in 1917.

The income account's salient features compare as below:

	1918	1917	1916
Gross	$1,618,566	$1,620,343	$1,712,927
Net after taxes	1,574,927	1,566,051	1,664,199
Other income	.....	100,000	311,857
Total income	$1,574,927	$1,666,051	$1,976,056
Balance after charges	788,743	873,305	1,186,294
Preferred dividends	707,097	707,097	549,964
Balance	$26,646	$111,208	$581,330

THE PORTLAND GAS & COKE COMPANY reports net earnings for the month of March show an increase of 25 per cent over March, 1918, in a statement issued by officials of the company. Net earnings for the 11 months ending March 31 show an increase of 31 per cent as compared with a similar period ending with March of last year. Gross receipts for March were 35 per cent greater than in the corresponding month of last year, and operating expenses show an increase of 43 per cent. For the 11 months' period the increase in gross receipts was 35 per cent, and in operating expenses 38 per cent over the previous 11 months.

President Daily of Cleveland Company Makes New Request for Rate Increase

A raise in gas rates in Cleveland and refusal of any further extensions in service were urged on the special council committee investigating the gas situation by M. B. Daly, president and general manager of the East Ohio Gas Company. Daly declared the supply for northern Ohio cities which the company serves has been reduced this year about 20,000,000 cu. ft. Higher prices would cause less consumption of gas, he held. Daly said experiments in other cities showed these results can be obtained by charging rates beginning at 45 cents for the first 5,000 cu. ft. and graduating up to 60 cents for above 15,000 cu. ft.

Steere Engineering Buys Owosso Boiler Works

The Steere Engineering Company of Detroit, Mich., have bought out the Owosso Boiler Works. This plant and its equipment and organization is now a part of the Steere Engineering Company organization. The capital stock of the Steere Engineering Company has been increased to cover this extension. The increased issue of this stock was oversubscribed by the original stockholders before the time limit for subscription had expired. The Steere Engineering Company have been taking practically the entire output of this plate shop and boiler works for the past two years and the idea back of the consolidation is to still further extend the plate shop and machine shop facilities of the company. With this addition to their present complete machine shop equipment, the Steere Engineering Company is now in a position to handle contracts of any size for machine work, plate work, structural steel work, welded steel piping, special machinery, etc. The main office of the company, which occupies the entire second floor of the Basso building in Detroit, will remain as heretofore. Communication between the factories and the office will be carried on by either wireless telegraph or wireless telephone, both systems are now under investigation. This will make it possible to concentrate the clerical work at the main office and, at the same time, keep very closely in touch with both factories.

THE AMERICAN GAS COMPANY has sold to Philadelphia bankers $2,000,000 7 per cent secured notes, maturing June 1, 1920, which are being offered at 100 and interest. The purpose of the issue is to refund a like amount of 6 per cent notes, due September 1 of this year.

Personal Notes

Samuel M. Vance, General Manager of Bristol Company, Dies

Samuel M. Vance, general manager of the Bristol (Va.) Gas & Electric Company, and one of the best known business men of Bristol, died Saturday morning, June 28, at 2.55 o'clock at his home. He was in his forty-ninth year; born September 27, 1870, at Kingsport, Tenn. His death followed several years of declining health and resulted from a complication of diseases that during all of this time steadily refused to yield to the best medical skill. Mr. Vance was an unusual example of the self-made man. Entering the service of the Bristol Street Railway thirty years ago, just about the time horses were exchanged for electric energy as a means of power, he continued in the same line until his death. A few years ago the gas and electric and street railway interests were separated, Mr. Vance becoming general manager of the gas and electrical interests for the new purchasers, the Doherty syndicate of New York. He held this position with singular ability and success. Under his management the business has been greatly expanded and developed. Mr. Vance was held in very high esteem by the New York interest, which owns the Bristol property so long entrusted to his management. He was frequently called to New York to confer with officials and often entertained by them. He attended many conferences of managers of various Doherty properties throughout the country and had a wide acquaintance over the country among men interested in electric and gas utilities. He was a student of his business, always striving to keep abreast of developments in his work and give his company the benefit of the most modern methods and ideas as well as his most sincere and aggressive personal efforts.

F. F. WINFREE, formerly connected with the Richmond, Cal., division of Western States Gas & Electric Company, has been appointed manager of the Sandpoint, Idaho, division of the Mountain States Power Company.

LIEUTENANT LINUS G. KNAPP, of the Rochester Railway & Light Company, has returned to civil life after twenty-two months' service in the army. He is now in charge of the auditing department of the Genesee Light & Power Company of Batavia. Before going into the service Mr. Knapp was connected with the consumers' bookkeeping department of this company as statistician.

MISS FRANCES E. MOORE, of the Rochester Railway & Light Company, whose work has been preparing and editing articles and recipes for the household section of *Gas and Electric News*, the company magazine, on June 1 left the company's employ to become director of the Bureau of Home Economics at the Rochester Chamber of Commerce.

HOWARD W. CALLAHAN, who has been a chemist at the Worcester (Mass.) Gas Light Company the past two years, has resigned and left Worcester for Pittsburgh, where he will have charge of the research work in connection with combustion furnaces and thermal efficiency with the Jones & McLaughlin Steel Co. Mr. Callahan is a Spencer, Mass., boy, and attended Clark college and Harvard University before entering the employ of the Worcester Gas Light Company.

FRED H. SARGENT has been named as acting agent of the Lawrence Gas Company. He has been assistant agent for a number of years. Mr. Sargent has been attending to the agent's duties during the illness of the late C. J. R. Humphreys. He will continue as acting agent pending the selection of a permanent successor to Mr. Humphreys.

F. D. WHARTON, for the past nine years connected with the American Gas Company at Philadelphia, has joined the sales organization of the Long-Landreth-Schneider Company, and will be located at St. Louis, Mo., covering the territory in that section of the country. Mr. Wharton has recently been spending some little time in the Kompak factory at New Brunswick, N. J., and has left for St. Louis well equipped to take up his new work. He has been well known to the gas fraternity for a number of years.

CLIFTON E. BARNES, of Champaign, Ill., has been appointed to one of the Research Graduate Assistantships in Gas Engineering at the University of Illinois. Mr. Barnes' appointment fills one of the two assistantships which are maintained at the University by the Illinois Gas Association, and are assigned to nominees of the association members. As yet the other assistantship has not been filled.

Construction Notes

Remodeling Gas Auditorium for Offices of Company

The Gas and Electrical Auditorium at the New York State Gas & Electric Company building, has been permanently closed, and is being remodeled for offices which will be occupied by the Associated Gas & Electrical Companies. The Red Cross and the City Federation of Women's Organizations were notified that beginning with June 1 the auditorium would no longer be available for meetings. Superintendent W. E. O'Neill stated recently that the change was necessary in order to accommodate the association which will occupy the entire third floor of the building, and that the work of making the necessary alterations is under way.

Southern Illinois Company Erecting New Mains

The Southern Illinois Gas Company has filed with the public utility commission a certificate for convenience and necessity to construct gas mains and service pipes over the hill roads between Murphysboro and Ava, and from Ava north, a distance of approximately four miles. The company's plan is to pump natural gas to Murphysboro, concentrate it there and distribute it through lines already in service to a number of cities of southern Illinois, nearest away of which is Carbondale.

Niles Gas Light Company Building Extensions

The Niles Gas Light Company, of Niles and Buchanan, Mich., is planning several main extensions for this year, on account of the western terminus of the Michigan Central R. R. being moved to Niles. Work on the terminus has been going on for over a year, and it is expected to be put in operation about Oct. 1. Contracts have been let and work has been started on 200 houses in East Lake Terrace, a new addition near the terminus. The work of laying mains to Liberty Heights, Buchanan, will be started about July 15, the company announces.

New Boiler and Pipe Line for Northumberland County

The Northumberland County Gas & Electric Company of Sunbury, Pa., is installing a large new boiler and some six-inch pipe, which will be placed in use within the next few weeks. Installation of the boiler and laying of the larger sized pipe is expected to abolish the last of Sunbury's gas cares, for some years at least.

Pacific Gas & Electric Company Raising Lake Spaulding

The Pacific Gas & Electric Company has under way plans for the addition of 15 ft. to its dam at Lake Spaulding, one of the company's reservoirs above Emigrant Gap, near the summit of the Sierra Nevada. In 1916 the dam was raised to the height of 260 ft. above stream level and to a capacity of 63,900 acre ft. The addition, it is estimated, will make the capacity 65,000 to 66,000 acre ft. In a statement covering the project an official of the company said:

"This will not increase the output of the water-power plants below Spaulding during the full water season, but by providing the company's ditches and canals with a more generous supply of water it will enable the plants to pull heavier loads in the short water season. It will be necessary to increase the size of four smaller dams that fill gaps at the lake side."

Springfield Company Building Main Across River

A license to the Springfield (Mass.) Gas Light Company to relocate a portion of its gas main across the Connecticut river and to build a riprap retaining wall and fill in solid the river in Springfield and West Springfield was granted by the State Commission on Waterways and Public Lands. A plan accompanies the license.